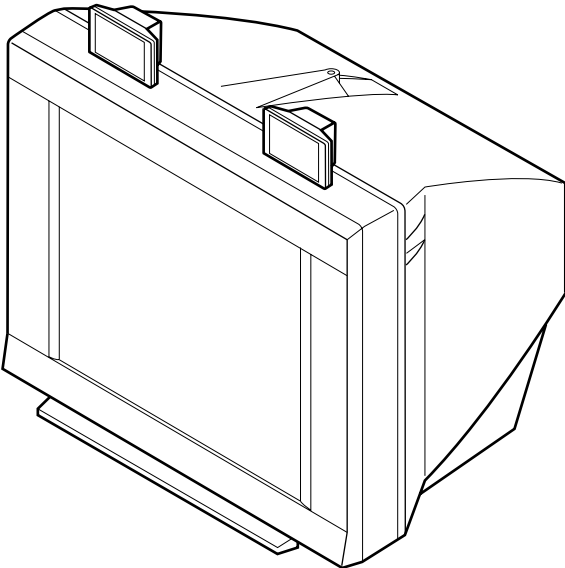
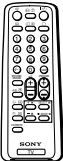


SERVICE MANUAL

BG-3R CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
<i>KV-XA21M80</i>	<i>RM-952</i>	<i>E</i>	<i>SCC-U53B-A</i>	<i>KV-XA21M60</i>	<i>RM-952</i>	<i>S</i>	<i>SCC-U49D-A</i>
<i>KV-XA21M83</i>	<i>RM-952</i>	<i>ME</i>	<i>SCC-U48D-A</i>	<i>KV-XA21M80</i>	<i>RM-952</i>	<i>ME</i>	<i>SCC-U48C-A</i>
<i>KV-XA21M50</i>	<i>RM-952</i>	<i>EM</i>	<i>SCC-U45F-A</i>				
<i>KV-XA21M50</i>	<i>RM-952</i>	<i>GE</i>	<i>SCC-U52B-A</i>				
<i>KV-XA21M61</i>	<i>RM-952</i>	<i>EM</i>	<i>SCC-U45E-A</i>				
<i>KV-XA21M61</i>	<i>RM-952</i>	<i>GE</i>	<i>SCC-U52C-A</i>				



SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	KV-XA21M80(E)/M80(ME)/ M50(GE)/M83(ME)/M61(GE)
	220-240 V AC, 50/60 Hz	KV-XA21M61/M50(EM)/M60(S)
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Stereo/Bilingual system	NICAM Stereo / Bilingual B/G, I; A2 Stereo Bilingual (German) B/G	KV-XA21M61/M60 only
Channel coverage		
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 CATV: S01 to S03, S1 to S41, Z1 to Z39	
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84	
⏏ (Antenna)	75-ohm external terminal	
Audio output (Speaker)	5W + 5W	
Number of terminal		
📺 (Video)	Input: 2* Output: 1	Phono jacks; 1 V _{P-P} , 75 ohms
🎵 (Audio)	Input: 2* Output: 1	Phono jacks; 500 mV _{rms}
🎧 (Headphones)	Output: 1	Stereo minijack
Picture tube	21 inch	
Tube size (cm)	54	Measured diagonally
Screen size (cm)	51	Measured diagonally
	60	
Dimension (w/h/d, mm)	640 x 456 x 498	
Mass (kg)	26	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.

The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

Diagnostic Item Description	No. of times STANDBY/TIMER lamp flashes	Self-diagnostic display/Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	<ul style="list-style-type: none"> • Power cord is not plugged in. • Fuse is burned out F4601 (F) 	<ul style="list-style-type: none"> • Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
<ul style="list-style-type: none"> • +B overcurrent (OCP) or overvoltage (OVP) • Vertical deflection stopped • Horizontal deflection overdrive 	2 times	002:000 or 002:001~255 003:001~255 004:001~255 at the same time	<ul style="list-style-type: none"> • H.OUT Q511 is shorted. (A board) • IC700 is shorted (C1 board) • -13V is not supplied. (A board) • IC 503 faulty (A board) 	<ul style="list-style-type: none"> • Power does not come on. • Load on power line is shorted. • Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
• White balance failure (no PICTURE)	5 times	005:000 or 005:001~225	<ul style="list-style-type: none"> • G2 is improperly adjusted. (Note 2) • CRT problem. • IC700 out is faulty (C1 board) • IC301 is faulty. (A board) • No connection A board to C1 board. 	<ul style="list-style-type: none"> • No raster is generated. • CRT cathode current detection reference pulse output is small.
• Micro reset	—	101:00 or 101:001~225	<ul style="list-style-type: none"> • Discharge CRT (C1 Board) • Static discharge • External noise 	<ul style="list-style-type: none"> • Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

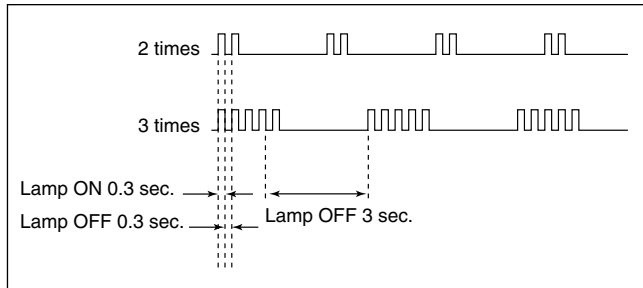
Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.

The symptom that is diagnosed first by the microcontroller is displayed on the screen.

Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.

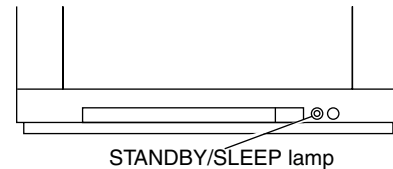
* IC700 out is faulty (C1 board).

2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT



Diagnostic Item	Flash Count*
+B overcurrent/overvoltage	2 times
Vertical deflection stopped	2 times
White balance failure	5 times

* One flash count is not used for self-diagnostic.



3. STOPPING THE STANDBY/TIMER FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure for confirmation on the screen:

[To Bring Up Screen Test]

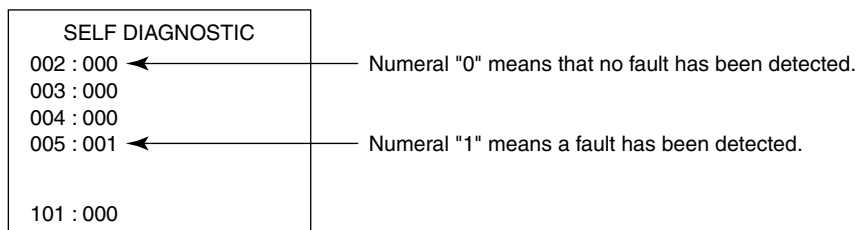
In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display → channel [5] → Sound volume [] → Power ON



Note that this differs from entering the service mode (mode volume []).

Self-Diagnosis screen display



5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to "0".

Unless the result display is cleared to "0", the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

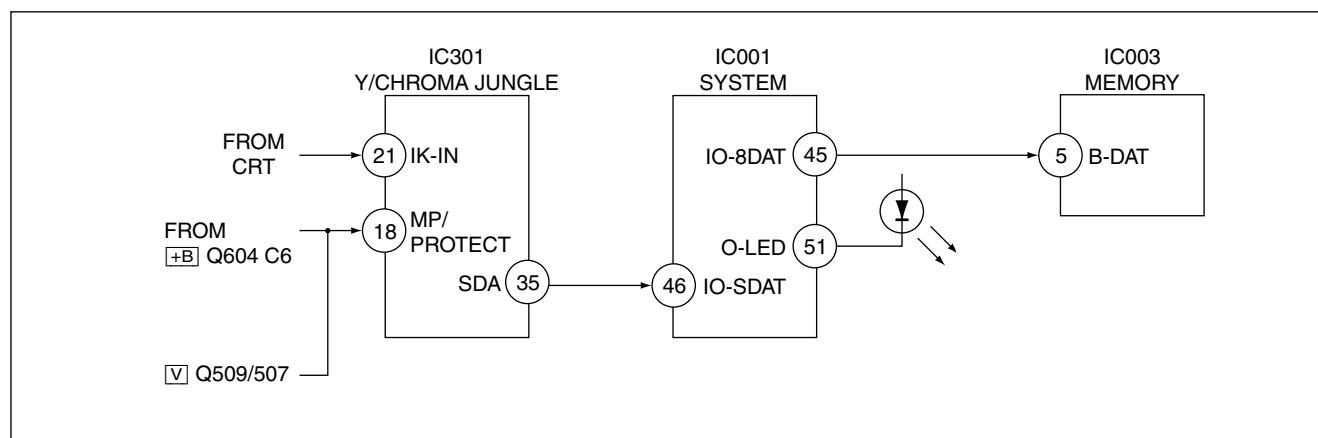
To clear the result display to "0", press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

Channel [8] ➡ 0

[Quitting Self-diagnostic screen]

To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT



+B overcurrent (OCP)

Occurs when an overcurrent on the +B(135) line is detected by Q604. If Q604 go to ON and the voltage to pin 18 of IC301 should go down when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

Vertical deflection stopped

Occurs when an absence of the vertical deflection pulse is detected by Q509 and IC001 shut down the power supply.

Vertical deflection overcurrent

Occurs when an overcurrent on V drive line is detected by Q507. Power supply will be shut down when detect this by IC001.

White balance failure

If the RGB levels* do not balance or become low level within 5 seconds, this error will be detected by IC301. TV will stay on, but there will be no picture.

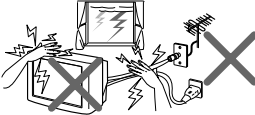

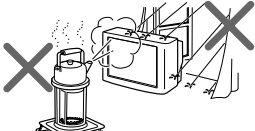
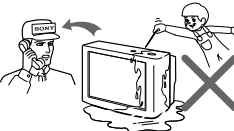
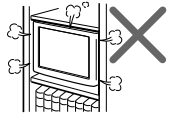
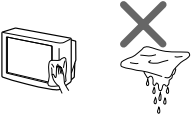
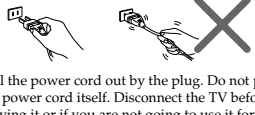

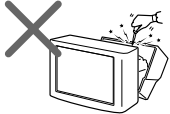

* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

The operating instruction mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

SECTION 1
GENERAL

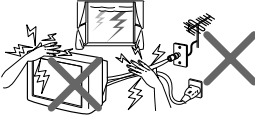

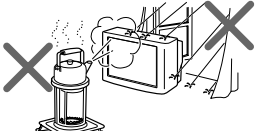
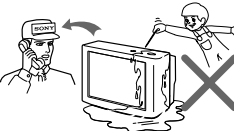
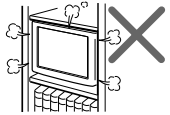
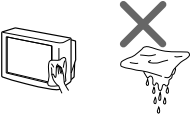
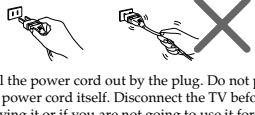

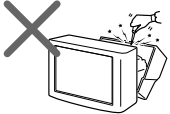

WARNING

- Dangerously high voltages are present inside the TV.
- Operate the TV only between 110 – 240 V AC. (KV-XA21M61(EM)/XA21M50(EM)/XA21M60(S))

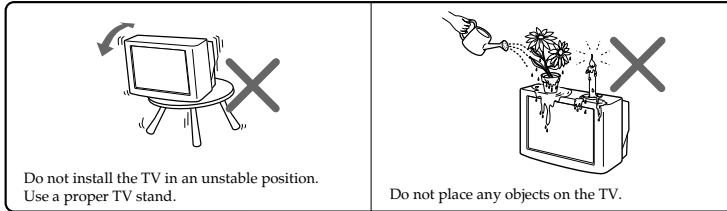
 <p>For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.</p>	 <p>For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.</p>
 <p>To prevent fire or shock hazard, do not expose the TV to rain or moisture.</p>	 <p>Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.</p>
 <p>Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.</p>	 <p>Clean the TV with a dry and soft cloth. Do not use benzine, thinner, or any other chemicals to clean the TV. Do not scratch the picture tube.</p>
 <p>Pull the power cord out by the plug. Do not pull the power cord itself. Disconnect the TV before moving it or if you are not going to use it for several days.</p>	 <p>Do not plug in too many appliances to the same power socket. Do not damage the power cord.</p>
 <p>Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.</p>	 <p>Your TV is recommended for home use only. Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.</p>

WARNING

- Dangerously high voltages are present inside the TV.
- Operate the TV only between 220 – 240 V AC. (KV-XA21M61(EM)/XA21M50(EM)/XA21M60(S))

 <p>For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.</p>	 <p>For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.</p>
 <p>To prevent fire or shock hazard, do not expose the TV to rain or moisture.</p>	 <p>Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.</p>
 <p>Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.</p>	 <p>Clean the TV with a dry and soft cloth. Do not use benzine, thinner, or any other chemicals to clean the TV. Do not scratch the picture tube.</p>
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WARNING (continued)



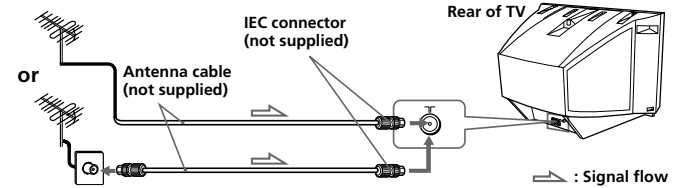
Using Your New TV

Getting Started

Step 1

Connect the antenna

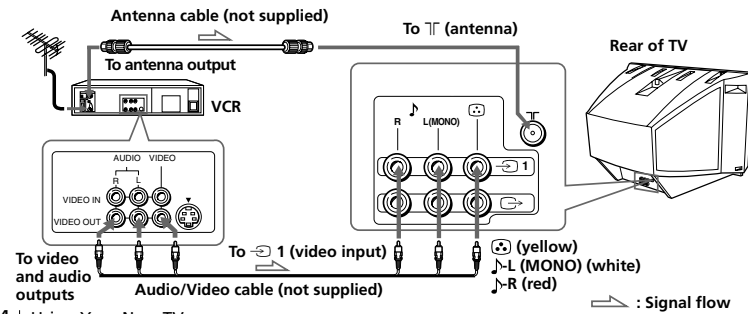
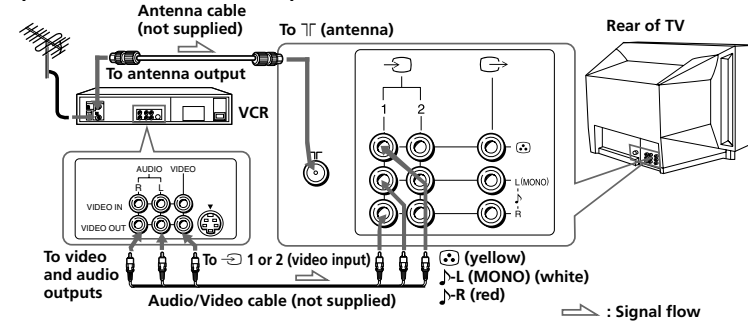
If you wish to connect a VCR, see the **Connecting a VCR** diagram below.



Connecting a VCR

To watch the video input, press (see page 14).

(Not used for these models)



Notes

- If you connect a monaural VCR, connect the yellow plug to \odot (the yellow jack) and the black plug to J-L (MONO) (the white jack).
- If you connect a VCR to the J (antenna) terminal, preset the signal output from the VCR to the program number 0 on the TV.
- When no signal is input from the connected video equipment, the TV screen becomes blue.

(Not used for these models)

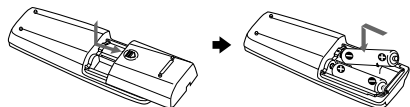
- Do not connect video equipment to the V 2 (video input) jacks at the front and the rear of your TV at the same time; otherwise the picture will not be displayed properly on the screen.

CAUTION

- Do not connect the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid that leaks from the batteries touches you, immediately wash it away with water.

Step 2

Insert the batteries into the remote



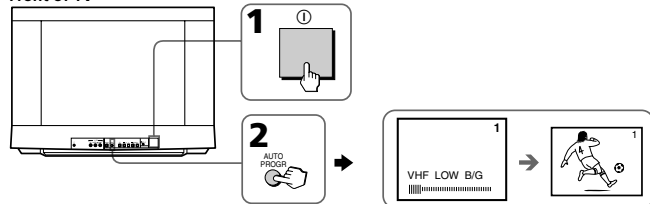
Note

- Do not use old batteries nor use different types of batteries together.

Step 3

Preset the channels automatically

Front of TV



Tips

- If you want to stop automatic channel presetting, press SELECT twice.
- If your TV has preset an unwanted channel or cannot preset a particular channel, then preset your TV manually (see page 11).

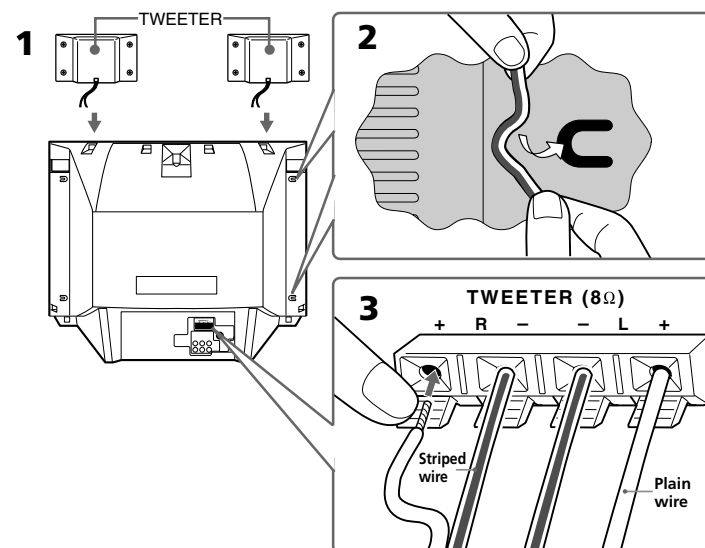
Note (Except KV-XA21M61 (EM/GE))

- During automatic channel presetting, your TV screen will indicate "B/G", "I", "D/K" or "M" for the TV system (TV SYS).

Connecting the TWEETER

(KV-XA21M83 only)

You can enjoy high quality sound by connecting the TWEETER.




- 1 Place the TWEETER on top of your TV.
- 2 Bend the wire to hook it at the side of your TV.
- 3 Connect the wires to the TWEETER terminals at the rear of your TV. The plain wire should be connected to the \oplus red terminal and the striped wire to the \ominus black terminal.

Notes

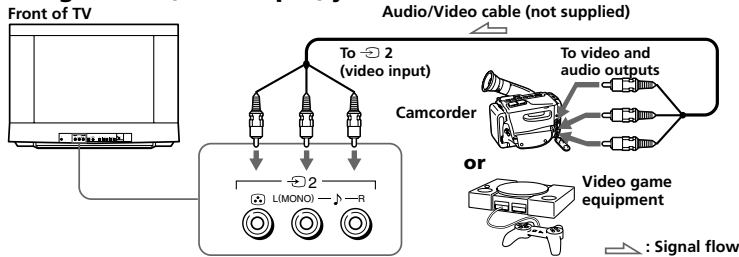
- Connect only the supplied TWEETER; otherwise your TV may malfunction.
- Unplug your TV from the wall outlet when connecting the TWEETER.
- To prevent a malfunction caused by a short circuit of the terminals, make sure that none of the TWEETER wire strands stick out, making contact with the neighbouring TWEETER terminal.

Connecting optional components




You can connect optional audio/video components, such as a VCR, multi disc player, camcorder, video game or stereo system.

To watch the video input of the connected equipment, press  (see page 14).

Connecting a camcorder/video game equipment using the (video input) jacks

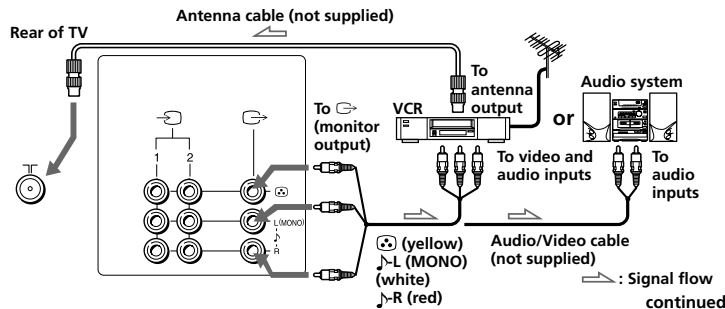


Notes

- You can also connect video equipment to the  1 (video input) jack at the rear of your TV.
- (Not used for these models)
- You can also connect video equipment to the  1 or 2 (video input) jacks at the rear of your TV.
- Do not connect video equipment to the  2 (video input) jacks at the front and the rear of your TV at the same time; otherwise the picture will not be displayed properly on the screen.

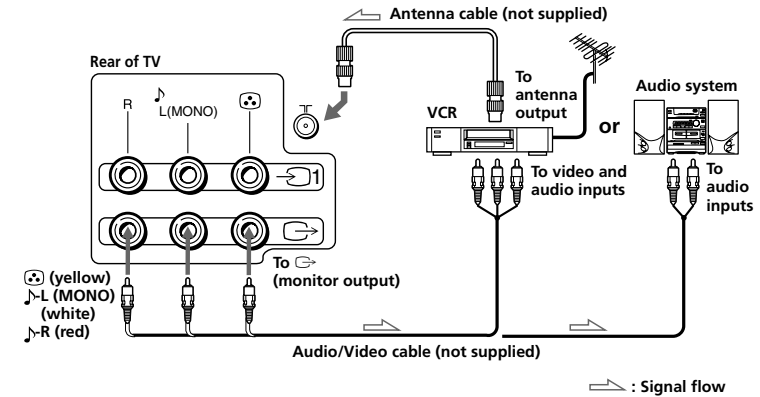
Connecting audio/video equipment using the (monitor output) jacks

(Not used for these models)



Using Your New TV | 7

Connecting optional components (continued)



Note

- If you connect a monaural VCR, connect the yellow plug to  (the yellow jack) and the black plug to  L (MONO) (the white jack).

8 | Using Your New TV

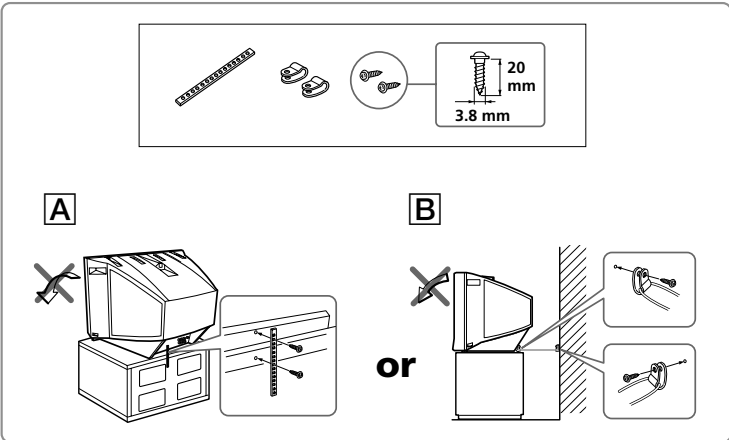
Securing the TV

To prevent the TV from falling, secure the TV using one of the following methods:

A With the supplied screws, attach the band to the TV stand and to the rear of the TV using the provided hole.

or

B Put the cord or chain through the clamps to secure the TV against a wall or pillar.



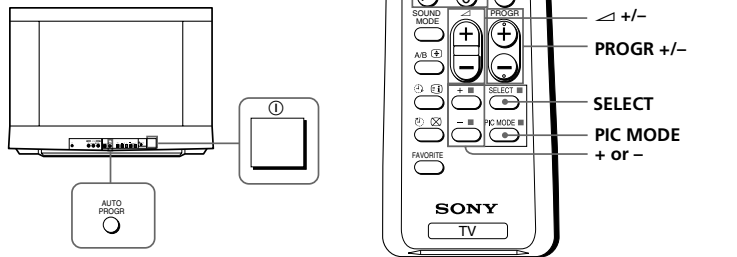
Note

- Use only the supplied screws. Use of other screws may damage the TV.

Using Your New TV

Presetting channels

You can preset up to 100 TV channels in numerical sequence from program number 1 using the remote and the buttons on your TV as well.



Presetting channels automatically

1 Press ① to turn on the TV.



2 Press AUTO PROGR.





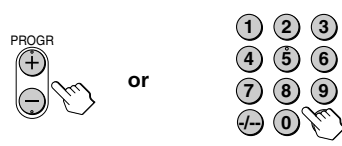
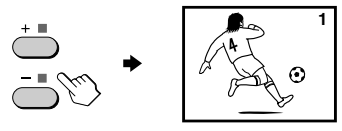

Note (Except KV-XA21M61 (GE), (EM))

- During automatic channel presetting, your TV screen will indicate "B/G", "I", "D/K" or "M" for the TV system (TV SYS).

To preset channels automatically from a specified program number

- (1) Press SELECT until "AUTO PROGRAM" appears.
- (2) Press + or -.
The on-screen display will start flashing.
- (3) Press PROGR +/- or the number buttons until the desired program number appears.
- (4) Press + or -.

Presetting channels manually

- 1 Press SELECT until "MANUAL PROGRAM" appears.
 
- 2 Press + or -.
 
- 3 Press PROGR +/- or the number buttons until the desired program number appears.
 
- 4 Press + or - until the desired channel picture appears.
 
- 5 Press SELECT.
 

Note

- If you preset a locked program number, that particular program number will be unlocked automatically (page 20).

To change the TV system setting

If the picture or sound is abnormal when receiving programs through the ㄗ (antenna) terminal

- (1) Press SELECT until "TV SYS" appears.

TV SYS: B/G

- (2) Press + or - to select the appropriate TV system until the picture or sound quality is optimal.

B/G → I → D/K → M

continued

Using Your New TV | 11

Presetting channels (continued)

To change the color system setting

If the color is abnormal when receiving programs through the ㄗ (antenna) terminal or the ㄑ (video input) jack.

- (1) Press SELECT until "COLOR SYS" appears.

COLOR SYS: AUTO

- (2) Press + or - to select the appropriate color system until the color is optimal.

AUTO → PAL → SECAM
NTSC 4.43 ← NTSC 3.58 ←

Tip

- Normally set "COLOR SYS" to "AUTO".

Skipping program numbers

- 1 Press PROGR +/- or the number buttons until the unused or unwanted program number appears.
- 2 Press SELECT until "MANUAL PROGRAM" appears.
- 3 Press + or -.
- 4 Press PIC MODE.
- 5 Press SELECT.

To restore the skipped program number again

Preset the channel automatically or manually.

Tip

- You can also use SELECT and ㄑ +/- on the TV to preset channels and skip program numbers.

To use the fine tuning (FINE) function

The fine tuning (FINE) function may help to reduce the following problems: incomplete Teletext display (KV-XA21M61 (GE), (EM) only), double images and lines moving across the TV screen.

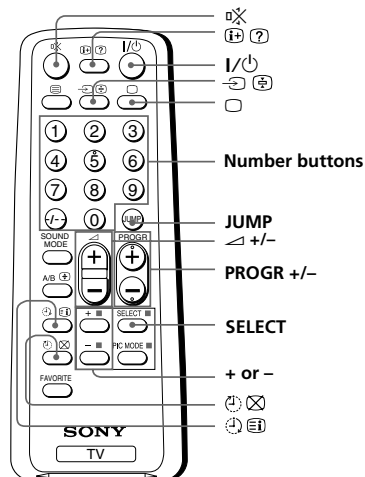
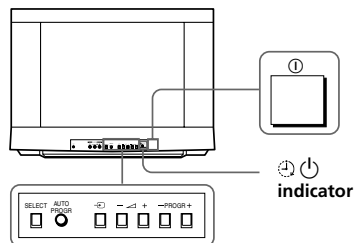
You can use the fine tuning function as below:

- (1) Select the program number you want to adjust.
- (2) Press SELECT until "MANUAL PROGRAM" appears on the screen.
- (3) Press + or - on the remote control once.
- (4) Press ㄑ to display "FINE" on the screen.
- (5) Press + or - continuously until the above problems are minimized.
The + or - icon on the screen flashes while tuning.
- (6) Press SELECT to return to normal screen.

12 | Using Your New TV

Watching the TV

This section explains functions used while watching the TV. Most operations can be done using the remote.



Using Your New TV

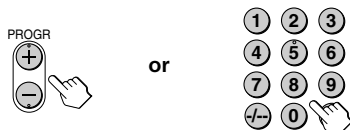
1 Press ① to turn on the TV.

When the TV is in the standby mode (the ① indicator on the TV is lit red), press I/O on the remote or PROGR +/- on the TV.



2 Press PROGR +/- or the number buttons to select the program number.

For double digit numbers, press -/-, then the number (e.g., for 25, press -/-, then 2 and 5).



3 Press ④ +/- to adjust the volume.



Watching the TV (continued)

Additional tasks

To	Press
Turn off temporarily	I/O. The ① indicator on the TV lights up red.
Turn off completely	① on the TV.
Mute the sound	MUTE.
Watch the video input (VCR, camcorder, etc.)	VIDEO 1 or VIDEO 2. To return to the TV program, press ①.
Jump back to the previous program number	JUMP.
Display the on-screen information*	INFO.
Adjust the volume of all program numbers automatically	SELECT repeatedly until "INTELLIGENT VOL" appears, then press + or - to select "ON". To cancel, select "OFF".
Adjust the picture position when it is not aligned to the TV screen (Not used for these models)	SELECT repeatedly until "PIC ROTATION" appears, then press + or - to adjust the alignment of the picture position.

PIC ROTATION ④ ⑤ ⑥ ⑦

The ④ or ⑤ icon on the screen flashes while adjusting.

* The picture, sound, and either the program number or video input are displayed. The on-screen display for the picture and sound information disappears after about three seconds.

Changing the on-screen display language

(KV-XA21M83 (ME), XA21M80(ME))

1 Press SELECT until "LANGUAGE / اللغة : ENGLISH" appears on the screen.



2 Press + or - to select "عربي".



Tip

- You can also use SELECT and ④ +/- on the TV to select the on-screen display language.



Watching the TV (continued)

Additional tasks

To	Press
Turn off temporarily	I/⏻. The ⏻ indicator on the TV lights up red.
Turn off completely	⏻ on the TV.
Mute the sound	🔇.
Watch the video input (VCR, camcorder, etc.)	➡ to select "VIDEO 1" or "VIDEO 2". To return to the TV program, press □.
Jump back to the previous program number	JUMP.
Display the on-screen information*	ℹ.
Adjust the volume of all program numbers automatically	SELECT repeatedly until "INTELLIGENT VOL" appears, then press + or – to select "ON". To cancel, select "OFF".
Adjust the picture position when it is not aligned to the TV screen (KV-XG29M50/XA21M93/XA21M61 only)	SELECT repeatedly until "PIC ROTATION" appears, then press + or – to adjust the alignment of the picture position. <div style="border: 1px solid black; padding: 2px; display: inline-block;"> PIC ROTATION ⬅️⬆️⬇️⬅️ </div> The ⬆️ or ⬅️ icon on the screen flashes while adjusting.

* The picture, sound, and either the program number or video input are displayed. The on-screen display for the picture and sound information disappears after about three seconds.

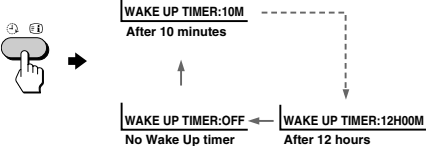
Changing the on-screen display language (Except KV-XA21M83/XA21M80/XA21M60 (s))

- Press SELECT until "LANGUAGE / 语言 : ENGLISH" appears on the screen.

- Press + or – to select "中文".


Tip

- You can also use SELECT and ⏻ +/– on the TV to select the on-screen display language.

Setting the Wake Up timer

- Press ⏻ until the desired period of time appears.
The Wake Up timer starts immediately after you have set it.

- Select the program number or video input you want to display when you wake up.
- Press I/⏻ or set the Sleep timer if you want the TV to turn off automatically.
The ⏻ indicator on the TV lights up orange.

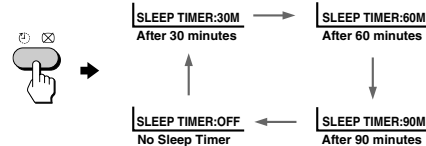
To cancel the Wake Up timer

Press ⏻ until "WAKE UP TIMER: OFF" appears or turn off the TV's main power.

Note

- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into the standby mode. To continue watching the TV, press any button or control on the TV or the remote.

Setting the Sleep timer

- Press ⏻ until the desired period of time appears.
The Sleep timer starts immediately after you have set it.
- 

To cancel the Sleep timer

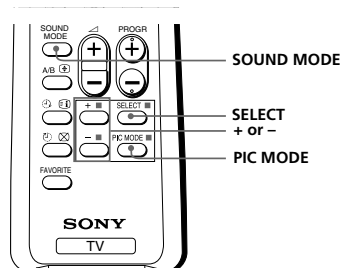
Press ⏻ until "SLEEP TIMER: OFF" appears or turn the TV off.

Advanced Operations

Customizing the picture and sound

You can customize the picture and sound by selecting the picture and sound modes or by adjusting its settings.

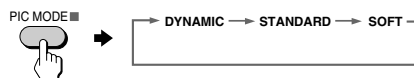
You can change the sound effect by selecting the surround mode.



Selecting the picture and sound modes

To select the picture mode

Press PIC MODE repeatedly until you get the desired picture mode.



Select	To
"DYNAMIC"	receive high contrast pictures.
"SOFT"	receive mild pictures.

KV-XA21M93

To select the sound mode

Press SOUND MODE repeatedly until you get the desired sound mode.



Select	To
"DYNAMIC"	listen to dynamic and clear sound that emphasizes the low and high sound.
"DRAMA"	listen to sound that emphasizes vocals and background music.
"SOFT"	receive soft sound.

Adjusting the picture and sound settings

- 1 Press SELECT until the desired setting appears.



Each time you press SELECT, the setting item will change as follows:



- 2 Press + or - to adjust the item.



- 3 To adjust other items, repeat steps 1 to 2.

* "HUE" can be adjusted for the NTSC system only.

Notes

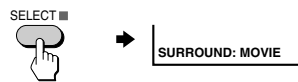
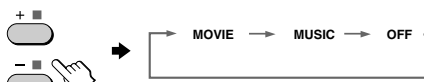
- When you select a picture or sound mode, the adjusted settings will be reset according to the selected mode.
- You can also use SELECT and Δ +/- on the TV to adjust the picture and sound settings.

continued

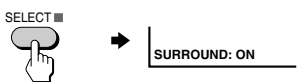
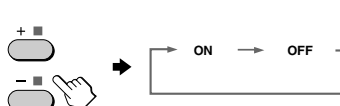
Customizing the picture and sound (continued)

Selecting the surround mode

(Not used for these models)

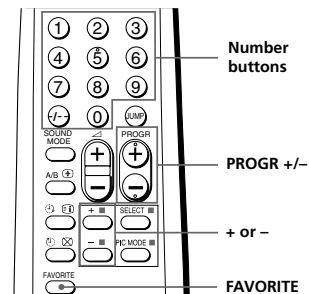
- Press SELECT repeatedly until "SURROUND" appears. 
- Press + or – to select the desired surround sound. 

Select	To
"MOVIE"	listen to sound that spreads out over a large area, giving the feeling of being at a movie theatre.
"MUSIC"	listen to the sound that gives the feeling of being at a live concert.
"OFF"	turn off the surround sound.

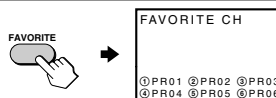
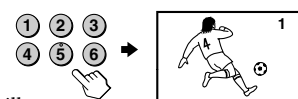
- Press SELECT repeatedly until "SURROUND" appears. 
- Press + or – to select "ON". To turn off the surround mode, select "OFF". 

Viewing your favorite channels

You can display six of your favorite channels for quick and easy selection. You can program the favorite channel as well.

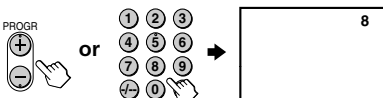

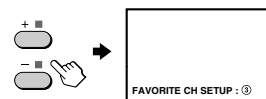



Selecting a favorite channel

- Press FAVORITE. 
- Press the number button from 1 to 6 to select the desired favorite channel. 

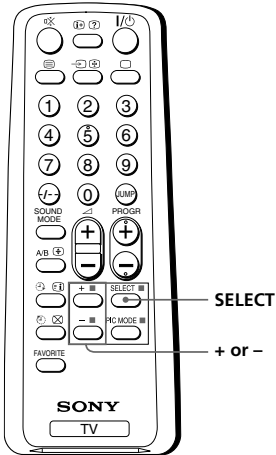
When you use the "FAVORITE CH" feature for the first time, six preset channels will appear.

Programming the favorite channel

- Press PROGR +/- or number buttons to select the program number you want to program (e.g., program number 8). 
- Press SELECT until "FAVORITE CH SETUP" appears. 
- Press + or – to select the favorite channel you want to program (e.g., ③). 
- Press SELECT. The selected favorite channel (e.g., ③) turns red for about one second. 
- To program other favorite channels, repeat steps 1 to 4.

Blocking the channels (CHILD LOCK)

You can lock some program numbers to prevent children from watching certain channels, by using the buttons on the remote control.



1 Select the program number you want to lock.

2 Press SELECT until "CHILD LOCK" appears on the screen.



3 Press + or - to select "ON".

The symbol appears on the screen.

To cancel, press + or - to select "OFF". The symbol disappears from the screen.

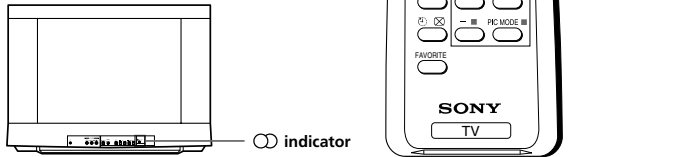


Note

- If you preset a locked program number, that particular program number will be unlocked automatically (page 10).

Enjoying stereo or bilingual programs (KV-XA21M61 (EM) only)

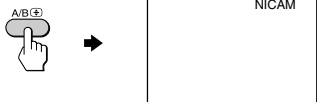
You can enjoy stereo sound or bilingual programs of NICAM and A2 stereo systems.



Press A/B repeatedly until you receive the sound you want.

The on-screen display changes to show the selected sound.

The indicator on the TV lights up red when receiving any stereo or bilingual program.



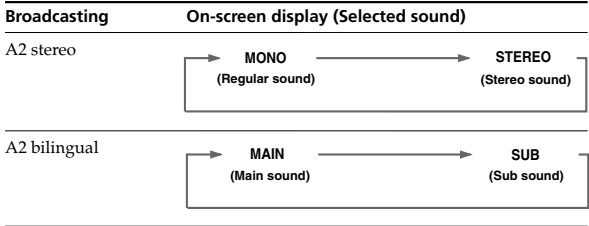
When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)	
NICAM stereo	NICAM (Stereo sound)	MONO (Regular sound)
	→	
NICAM bilingual	NICAM MAIN (Main sound)	NICAM SUB (Sub sound)
	→	
	MONO (Regular sound)	
NICAM monaural	NICAM MAIN (Main sound)	MONO (Regular sound)
	→	

continued

Enjoying stereo or bilingual programs (continued)

When receiving an A2 program



Receiving area for NICAM and A2 programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, Malaysia, Thailand, etc.
A2	Australia, Malaysia, Thailand, etc.

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select “MONO”. The sound becomes monaural, but the noise is reduced.
- Before receiving a NICAM stereo program in China, please check the NICAM broadcast condition at your area. When receiving a NICAM stereo program, the receiving conditions might vary depending on area. In addition, different strength of the NICAM broadcast signal might affect the receiving quality.

If the sound is distorted when receiving a monaural program through the ㊂ (antenna) terminal

Press A/B repeatedly until “MONO” appears on the screen.
To cancel the monaural sound setting, press A/B again until “AUTO” appears on the screen.



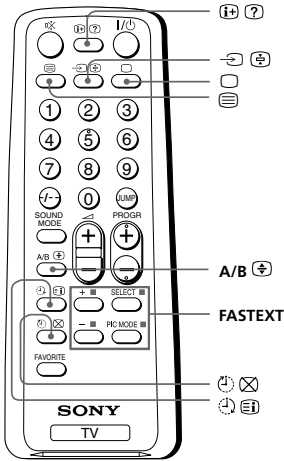
Notes

- The “MONO” or “AUTO” setting is memorized for each program number.
- You cannot receive stereo broadcast signal when the TV is in the “MONO” setting. Normally set the TV to “AUTO”.

Viewing Teletext

(KV-XA21M61 (EM/GE))

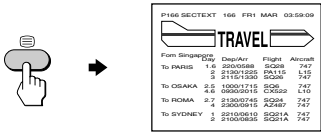
TV stations broadcast an information service called Teletext via some TV channels. Teletext allows you to receive various information, such as shares market or news.



Displaying Teletext

- 1 Select a TV channel that carries the Teletext broadcast you want to watch.
- 2 Press ㊂ to display the text.

A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, “100” is displayed at the top left corner of the screen.















To turn off Teletext

Press ㊂.

continued

Viewing Teletext (continued)

Additional Teletext tasks

To	Do this
display a Teletext page on the TV picture	Press  . Each time you press  , the screen changes as follows: Teletext → Teletext and TV → TV.
check the contents of a Teletext service	Press  . An overview of the Teletext contents and page numbers appear on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page. * If you make a mistake, reenter the correct page number. To access the next or previous page, press PROGR +/-.
Hold (pause) a Teletext display	Press  to display the symbol "  " at the top left corner of the screen. To resume normal Teletext operation, press  or  .
reveal concealed information (e.g., an answer to a quiz)	Press  . To conceal the information, press the button again.
enlarge the Teletext display	Press  . Each time you press  , the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
wait for a Teletext page while watching a TV program	1 Enter the Teletext page number that you want to refer to, then press  . 2 When the page number is displayed, press  to show the text.

* You can also select a Teletext page that appears in the colored column at the bottom of the screen using the corresponding color-coded button on the remote.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcasted, the colored menus appear at the bottom of the screen. The colors of the menus correspond to the red ■, green ■, yellow ■, and blue ■ color-coded buttons on the remote.



To access a FASTEXT menu

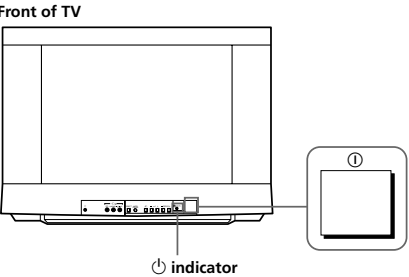
Press the color-coded button on the remote corresponding to the menu you want. The menu page appears on the screen after several seconds.





Additional Information

Self-diagnosis function

(Except KV-XA21M50/XA21M61/XA21M60 (S))

Your TV is equipped with a self-diagnosis function. If there is a problem with your TV, the  indicator flashes red. The number of times the  indicator flashes indicates the possible causes.



- 1 Check that the  indicator flashes red a number of times between 3-second intervals.
- 2 Count the number of times the  indicator flashes.
- 3 Press  (main power) to turn off your TV.
- 4 Inform your nearest Sony service center about the number of times the  indicator flashes.
Be sure to note the model name and serial number located on the rear of your TV.

Additional Information

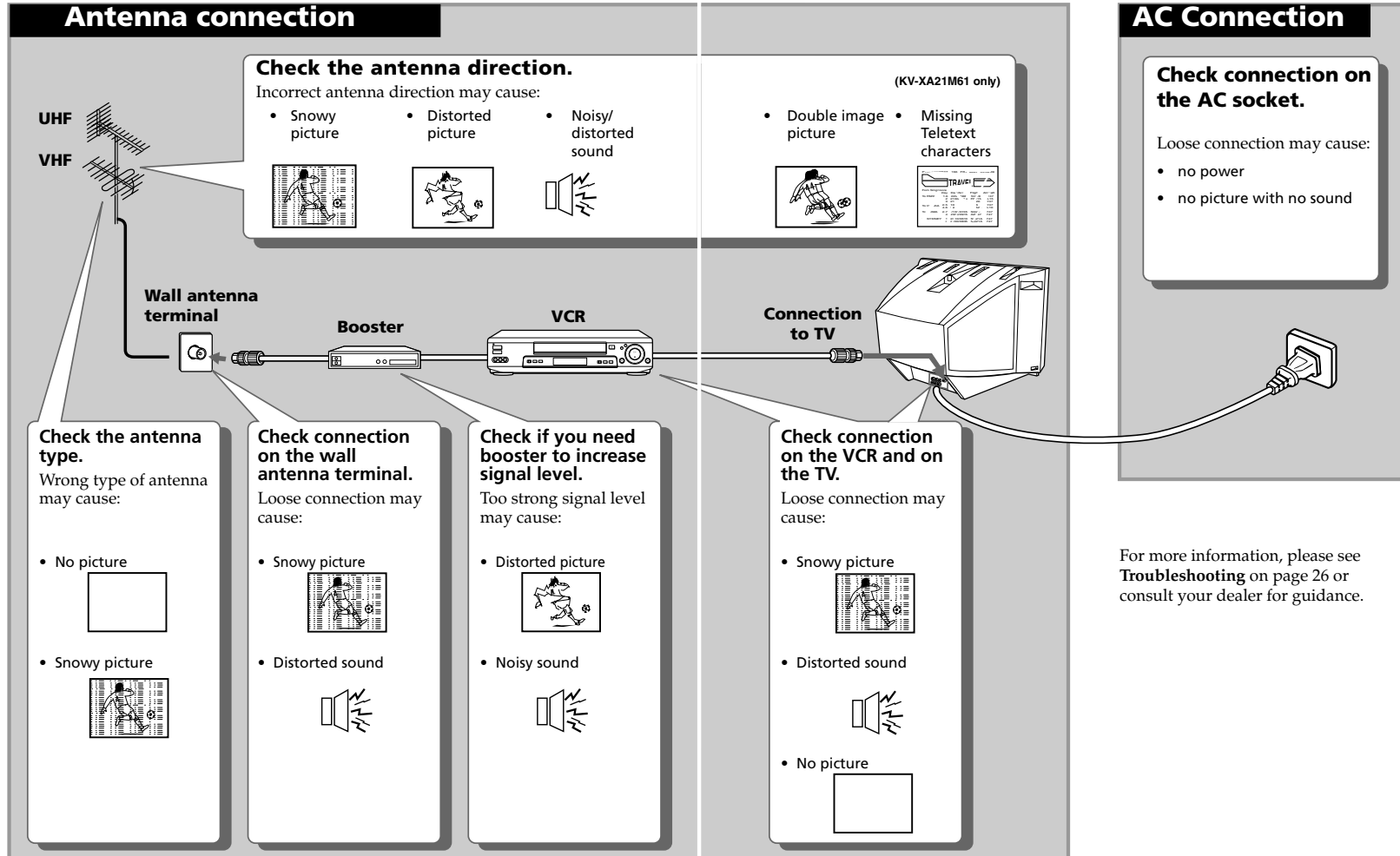
KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/XA21M60
RM-952

Additional Information

Troubleshooting Shortcuts

(KV-XA21M50 (EM)/XA21M61 (EM))

For better viewing, please check the following connections.







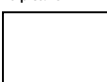









Additional Information

Troubleshooting

(KV-XA21M83 (ME)/XA21M80 (ME)/XA21M60)


If you find any problem while viewing your TV, please check the following guide. If any problem persists, contact your Sony dealer .

Symptom	Possible cause	Solutions	Page
Snowy picture 	<ul style="list-style-type: none"> Connection is loose or the cable is damaged. Channel presetting is inappropriate or incomplete. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and on the wall. Press SELECT until "MANUAL PROGRAM" appears on the screen, then preset the channel again. 	4 11
Noisy sound 	<ul style="list-style-type: none"> The antenna type is inappropriate. The antenna direction is inappropriate. Signal transmission is low. 	<ul style="list-style-type: none"> Check the antenna type (VHF/UHF). Contact a Sony dealer for advice. Adjust the antenna direction. Contact a Sony dealer for advice. Try using a booster. 	– – –
Distorted picture 	<ul style="list-style-type: none"> Broadcast signals are too strong. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	–
Noisy sound 			
Good picture 	<ul style="list-style-type: none"> The TV system setting or channel presetting is inappropriate or incomplete. 	<ul style="list-style-type: none"> If the sound of some channels are noisy, select the channel, then select the appropriate TV system (TV SYS). 	11
Noisy sound 			
No picture 	<ul style="list-style-type: none"> The power cord, antenna or VCR is not connected. The TV is not turned on. 	<ul style="list-style-type: none"> Check the power cord, antenna and the VCR connections. Press I/⏻ (power). Press ① (main power) on the TV to turn off the TV for about five seconds, then turn it on again. 	4 14 13
No sound 			

Symptom	Possible cause	Solutions	Page
Good picture 	<ul style="list-style-type: none"> The volume level is too low. 	<ul style="list-style-type: none"> Press \triangle + to increase the volume level. 	13
No sound 	<ul style="list-style-type: none"> The sound is muted. 	<ul style="list-style-type: none"> Press M to cancel the muting. 	14
Dotted lines or stripes 	<ul style="list-style-type: none"> There is local interference from cars, neon signs, hair dryers, power generators, etc. 	<ul style="list-style-type: none"> Do not use a hair dryer or other equipment near the TV. Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice. 	– –
Double images or "ghosts" 	<ul style="list-style-type: none"> Broadcast signals are reflected by nearby mountains or buildings. The antenna direction is inappropriate. Use of a booster is inappropriate. 	<ul style="list-style-type: none"> Use a highly directional antenna. Use the fine tuning (FINE) function. Adjust the antenna direction. Contact a Sony dealer for advice. Turn off or disconnect the booster if it is in use. 	– 12 – –
No color 	<ul style="list-style-type: none"> The color level setting is too low. 	<ul style="list-style-type: none"> Press SELECT until "COLOR" appears on the screen, then press + or – to adjust the color level. 	17
	<ul style="list-style-type: none"> The color system setting is inappropriate. 	<ul style="list-style-type: none"> Press SELECT until "COLOR SYS " appears on the screen, then check the color system setting (usually set this to "AUTO"). 	12
	<ul style="list-style-type: none"> The antenna direction is inappropriate. 	<ul style="list-style-type: none"> Adjust the antenna direction. Contact a Sony dealer for advice. 	–
Abnormal color patches 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other electrical equipment away from the TV. Do not move the TV while the TV is turned on. Press ① (main power) on the TV to turn off the TV for about five minutes, then turn it on again. 	–

continued

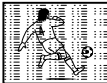





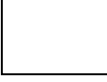

Troubleshooting (continued)







Symptom	Possible cause	Solutions	Page
"100" appears on the top of the screen and there is no Teletext display. (Not used for these models)	• The channel carries no Teletext broadcast.	—	21
Teletext display is incomplete (snowy picture or double images). (Not used for these models)	<ul style="list-style-type: none"> • Connection is loose or the cable is damaged. • The antenna direction is inappropriate. • Signal transmission is too low. 	<ul style="list-style-type: none"> • Check the antenna cable and connection on the TV, VCR, and at the wall. • Adjust the antenna direction. Contact a Sony dealer for advice. • Try using a booster. • Use the fine tuning (FINE) function. 	4 — 12
Picture slant (Not used for these models)	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	<ul style="list-style-type: none"> • Keep external speakers or other electrical equipment away from the TV. • Press SELECT until "PIC ROTATION" appears on the screen, then press + or - to align the picture to the TV screen. 	— 14
Lines moving across the TV screen.	• There is interference from external sources, e.g., heavy machineries, nearby broadcast station.	• Use the fine tuning (FINE) function.	12
The  indicator on your TV flashes red a number of times between 3-second intervals.	• Your TV may need service.	• Contact your nearest Sony service center.	23
TV cabinet creaks.	• Changes in room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.	—	—
A "boom" sound is heard when the TV is turned on.	• The TV's demagnetizing function is working. This does not indicate a malfunction.	—	—

Troubleshooting

(KV-XA21M83 (E)/XA21M50 (GE)/XA21M61 (GE))


If you find any problem while viewing your TV, please check the following guide. If any problem persists, contact your Sony dealer.

Symptom	Possible cause	Solutions	Page
Snowy picture 	<ul style="list-style-type: none"> • Connection is loose or the cable is damaged. • Channel presetting is inappropriate or incomplete. 	<ul style="list-style-type: none"> • Check the antenna cable and connection on the TV, VCR and on the wall. • Press SELECT until "MANUAL PROGRAM" appears on the screen, then preset the channel again. 	4 11
Noisy sound 	<ul style="list-style-type: none"> • The antenna type is inappropriate. • The antenna direction is inappropriate. • Signal transmission is low. 	<ul style="list-style-type: none"> • Check the antenna type (VHF/UHF). Contact a Sony dealer for advice. • Adjust the antenna direction. Contact a Sony dealer for advice. • Try using a booster. 	— — —
Distorted picture 	• Broadcast signals are too strong.	• Turn off or disconnect the booster if it is in use.	—
Noisy sound 			
Good picture 	• The TV system setting or channel presetting is inappropriate or incomplete.	<ul style="list-style-type: none"> • If the sound of all the channels are noisy, check the TV system (TV SYS) setting, then press AUTO PROGR to preset the channels again. • If the sound of some channels are noisy, select the channel, then select the appropriate TV system (TV SYS). 	10 11
Noisy sound 	• The selected sound is inappropriate.	• If the sound of some channels are noisy, select the channel, then press A/B to select the main sound (KV-XA21M61 only).	21
No picture 	<ul style="list-style-type: none"> • The power cord, antenna or VCR is not connected. • The TV is not turned on. 	<ul style="list-style-type: none"> • Check the power cord, antenna and the VCR connections. • Press I/⏻ (power). • Press ① (main power) on the TV to turn off the TV for about five seconds, then turn it on again. 	4 14 13
No sound 			

Symptom	Possible cause	Solutions	Page
Good picture 	<ul style="list-style-type: none"> The volume level is too low. 	<ul style="list-style-type: none"> Press $\angle +$ to increase the volume level. 	13
	<ul style="list-style-type: none"> The sound is muted. 	<ul style="list-style-type: none"> Press \otimes to cancel the muting. 	14
	<ul style="list-style-type: none"> Broadcast signal has a transmission problem. 	<ul style="list-style-type: none"> Press A/B until a better sound is heard (KV-XA21M61 only). 	21
No sound 			
Dotted lines or stripes 	<ul style="list-style-type: none"> There is local interference from cars, neon signs, hair dryers, power generators, etc. 	<ul style="list-style-type: none"> Do not use a hair dryer or other equipment near the TV. Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice. 	— —
Double images or "ghosts" 	<ul style="list-style-type: none"> Broadcast signals are reflected by nearby mountains or buildings. 	<ul style="list-style-type: none"> Use a highly directional antenna. Use the fine tuning (FINE) function. 	— 12
	<ul style="list-style-type: none"> The antenna direction is inappropriate. 	<ul style="list-style-type: none"> Adjust the antenna direction. Contact a Sony dealer for advice. 	—
	<ul style="list-style-type: none"> Use of a booster is inappropriate. 	<ul style="list-style-type: none"> Turn off or disconnect the booster if it is in use. 	—
No color 	<ul style="list-style-type: none"> The color level setting is too low. 	<ul style="list-style-type: none"> Press SELECT until "COLOR" appears on the screen, then press + or - to adjust the color level. 	17
	<ul style="list-style-type: none"> The color system setting is inappropriate. 	<ul style="list-style-type: none"> Press SELECT until "COLOR SYS " appears on the screen, then check the color system setting (usually set this to "AUTO"). 	12
	<ul style="list-style-type: none"> The antenna direction is inappropriate. 	<ul style="list-style-type: none"> Adjust the antenna direction. Contact a Sony dealer for advice. 	—
Abnormal color patches 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other electrical equipment away from the TV. Do not move the TV while the TV is turned on. Press O (main power) on the TV to turn off the TV for about five minutes, then turn it on again. 	—
TV cannot receive stereo broadcast signal (KV-XA21M61 only)	<ul style="list-style-type: none"> The stereo reception setting is inappropriate. 	<ul style="list-style-type: none"> Press A/B until "AUTO" appears on the screen. 	21

continued

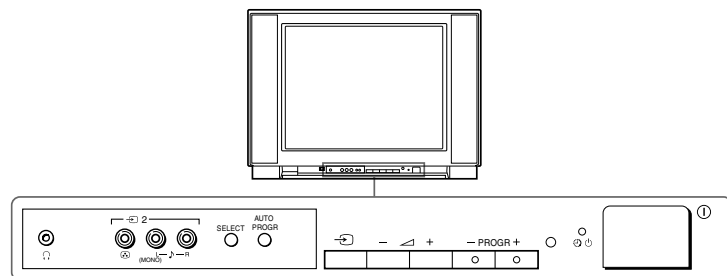
Troubleshooting (continued)

Symptom	Possible cause	Solutions	Page
Stereo broadcast sound switches on and off or is distorted. Or The sound switches between monaural and stereo frequently. (KV-XA21M61 only)	<ul style="list-style-type: none"> Connection is loose or the cable is damaged. The antenna direction is inappropriate. Broadcast signal has a transmission problem. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR and on the wall. Adjust the antenna direction. Contact a Sony dealer for advice. Press A/B until a better sound is heard. 	4 — 21
"100" appears on the top of the screen and there is no Teletext display. (KV-XA21M61 only)	<ul style="list-style-type: none"> The channel carries no Teletext broadcast. 	—	23
Teletext display is incomplete (snowy picture or double images). (KV-XA21M61 only)	<ul style="list-style-type: none"> Connection is loose or the cable is damaged. The antenna direction is inappropriate. Signal transmission is too low. 	<ul style="list-style-type: none"> Check the antenna cable and connection on the TV, VCR, and at the wall. Adjust the antenna direction. Contact a Sony dealer for advice. Try using a booster. Use the fine tuning (FINE) function. 	4 — — 12
Picture slant (KV-XA21M61 only) 	<ul style="list-style-type: none"> The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV. 	<ul style="list-style-type: none"> Keep external speakers or other electrical equipment away from the TV. Press SELECT until "PIC ROTATION" appears on the screen, then press + or - to align the picture to the TV screen. 	— 14
Lines moving across the TV screen.	<ul style="list-style-type: none"> There is interference from external sources, e.g., heavy machineries, nearby broadcast station. 	<ul style="list-style-type: none"> Use the fine tuning (FINE) function. 	12
The O indicator on your TV flashes red a number of times between 3-second intervals.	<ul style="list-style-type: none"> Your TV may need service. 	<ul style="list-style-type: none"> Contact your nearest Sony service center. 	25
TV cabinet creaks.	<ul style="list-style-type: none"> Changes in room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction. 	—	—
A "boom" sound is heard when the TV is turned on.	<ul style="list-style-type: none"> The TV's demagnetizing function is working. This does not indicate a malfunction. 	—	—

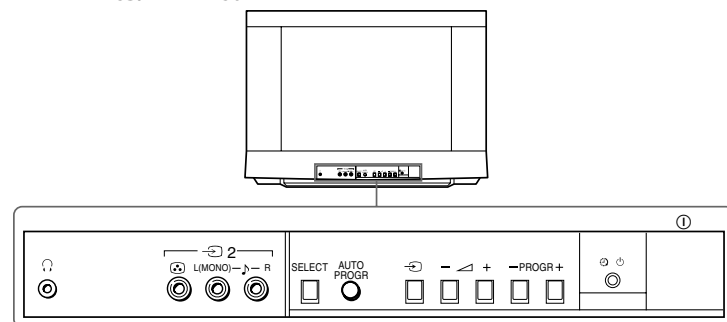
Overview of controls

TV front panel

(Not used for these models)



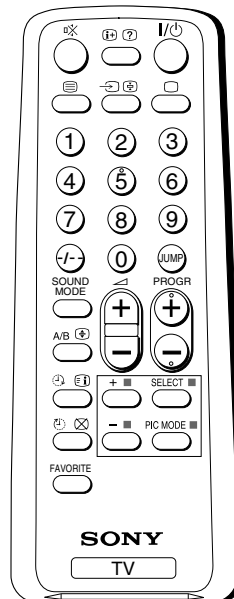
KV-XA21M83/XA21M80



Button	Function	Page
AUTO PROGR	Preset channels automatically.	5
SELECT	Select the desired item.	12
PROGR +/-	Select program number.	13
⓪	Turn off completely or turn on the TV.	13
△ +/-	Adjust volume.	13
Ⓜ	Standby indicator.	13
⏮	Select TV or video input.	14
⏰	Wake Up indicator.	15
🎧	Headphone jack.	-

Overview of controls (continued)

Remote Control



The names/symbols of buttons on the remote are indicated in different colors to represent the available functions.

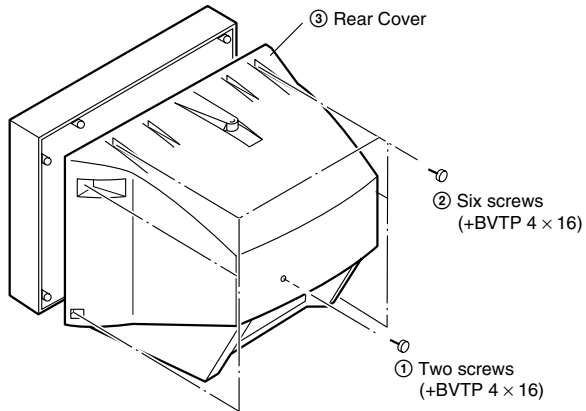
Label color	Button function
White	For general TV operations
Green	For Teletext operations

Button	Function	Page
SELECT	Select the desired item.	11
+/-	Adjust value.	11
PROGR +/-	Select program number.	13
0 - 9, +/-	Input numbers.	13
△ +/-	Adjust volume.	13
I/Ⓜ	Turn off temporarily or turn on the TV.	13
⏮	Select TV or video input.	14
Ⓜ	Display the TV program.	14
Ⓜ	Mute the sound.	14
Ⓜ	Display on-screen information.	14
JUMP	Jump to previous program number.	14
Timer operations		
⏰	Set TV to turn on automatically.	15
⏰	Set TV to turn off automatically.	15
PIC MODE	Select picture mode.	16
SOUND MODE	Select sound mode.	16
FAVORITE	Display favorite channels.	19
Stereo/bilingual operations		
A/B	Select stereo/bilingual mode.	21
Teletext operations		
Ⓜ	Display Teletext broadcast.	23
Ⓜ	Display Teletext service contents.	24
Ⓜ	Stop Teletext display from scrolling.	24
Ⓜ	Reveal concealed information.	24
Ⓜ	Enlarge the Teletext display.	24
Ⓜ	Show TV screen while waiting for Teletext page.	24
■ (red, green, yellow, blue)	Access a FASTEXT menu.	24

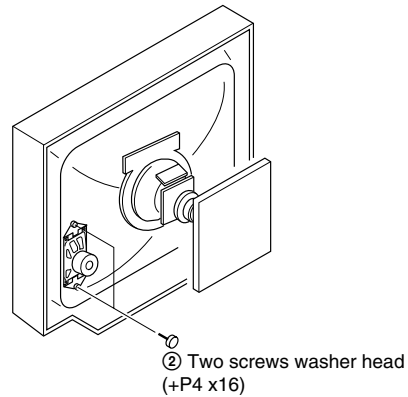
continued

SECTION 2 DISASSEMBLY

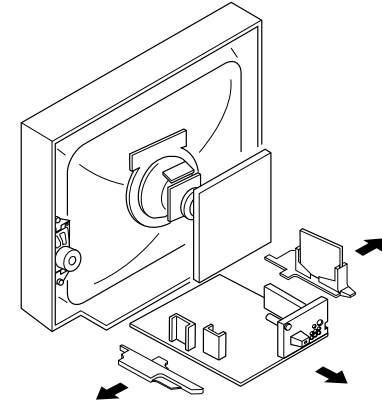
2-1. REAR COVER REMOVAL



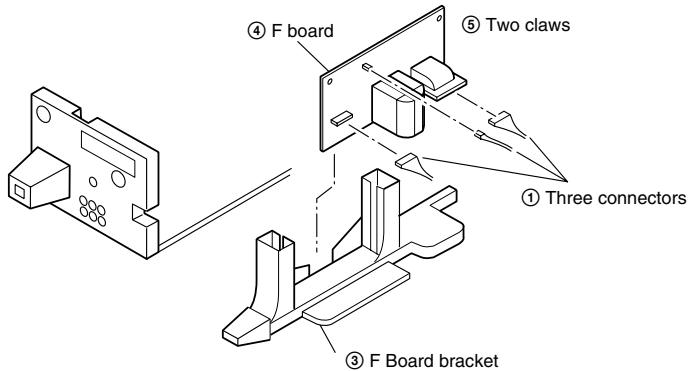
2-2. SPEAKER REMOVAL



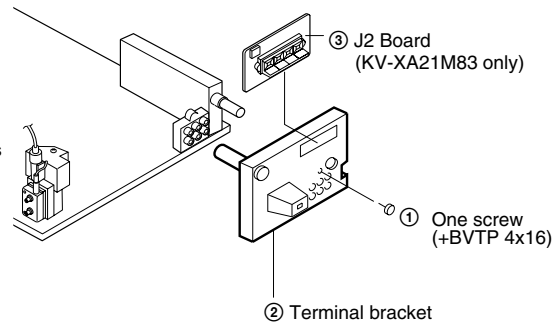
2-3. CHASSIS ASSY REMOVAL



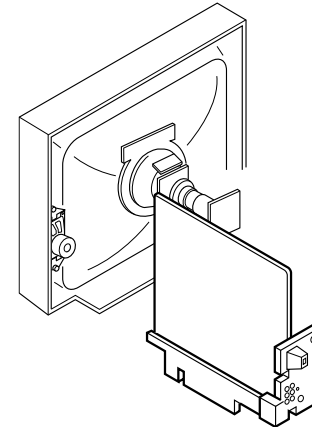
2-4. F BRACKET REMOVAL



2-5. J2 BOARD AND TERMINAL BRACKET REMOVAL



2-6. SERVICE POSITION



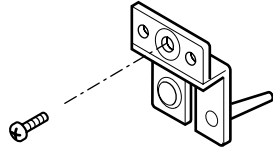
Note:

1. Disconnect the speaker connection on the right side.
2. Undress necessary wires that creates tension while placing the chassis into Service Position.

2-7. REPLACEMENT OF PARTS

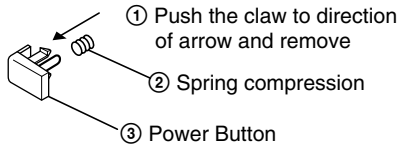
For replacement of light guide,unscrew them, exchange with new parts and fix them with screws respectively.

2-7-1. Replacement of Light Guide



One screw
(+BVTP 3 × 12)

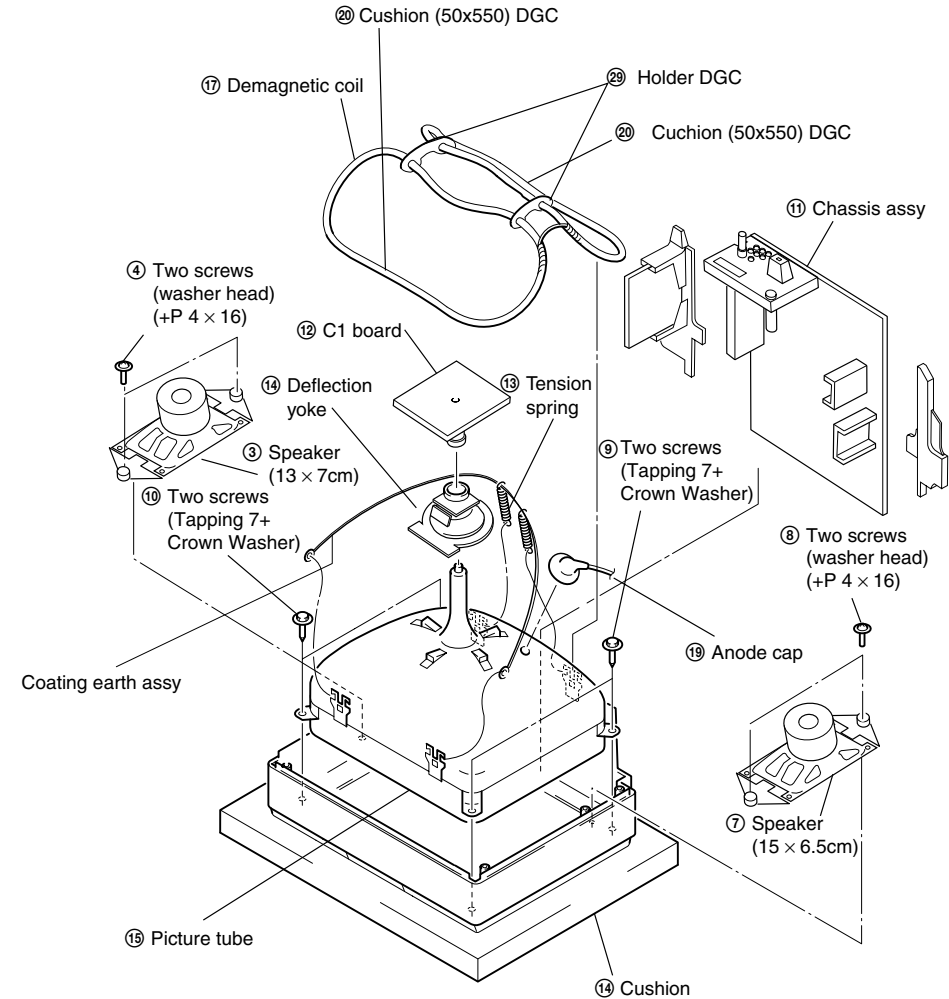
2-7-2. Replacement of Power Button



2-8. PICTURE TUBE REMOVAL

Note:

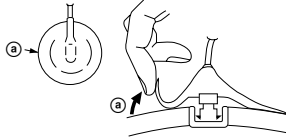
- The picture tube for Austarlia model is upside down, and the position for the anode-cap and the tension spring are changed accordingly.
- Please remove necessary CRT support located on top left, top right, prior to removing the CRT.



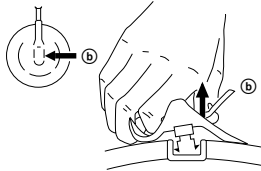
•REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

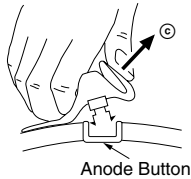
•REMOVING PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a).



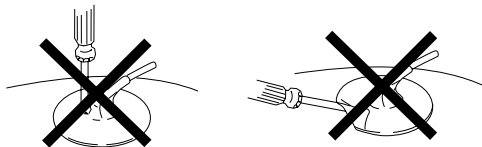
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b).



- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c).

• HOW TO HANDLE AN ANODE-CAP

- ① Do not damage the surface of anode-caps with sharp shaped objects.
- ② Do not press the rubber too hard so as not to damage the inside of anode-cap.
A metal fitting called the shatter-hook terminal is built into the rubber.
- ③ Do not turn the foot of rubber over too hard.
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3 SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:

PICTURE control normal

BRIGHTNESS control normal

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
Contrast } normal
Brightness }
2. Set the pattern generator raster signal to a green raster.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
(See Figures 4-1 through 4-4.)
4. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 4-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it.
(See Figure 4-4.)

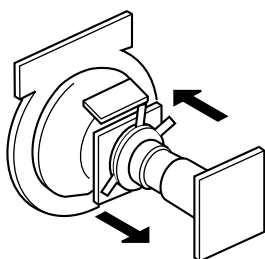


Fig. 4-1

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Pattern Generator
2. Degausser
3. Oscilloscope

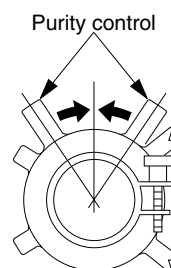


Fig. 4-2

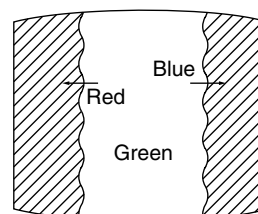


Fig. 4-3

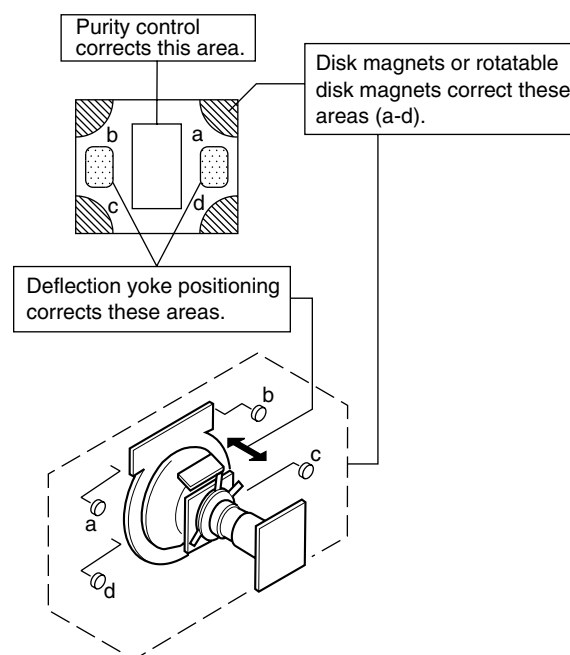


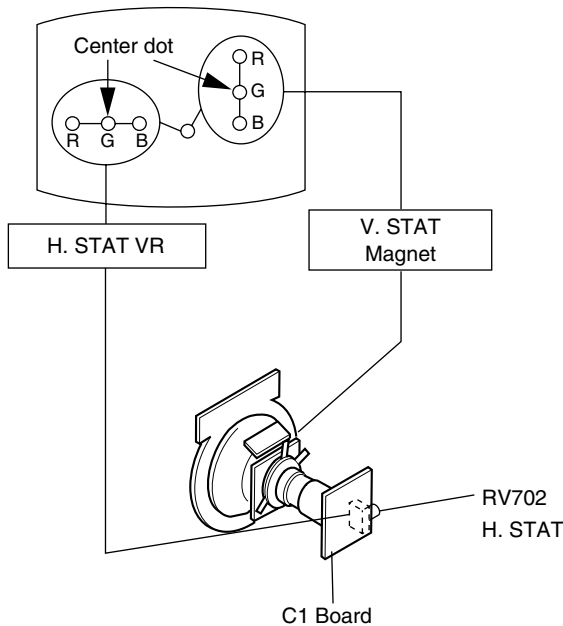
Fig. 4-4

3-2. CONVERGENCE

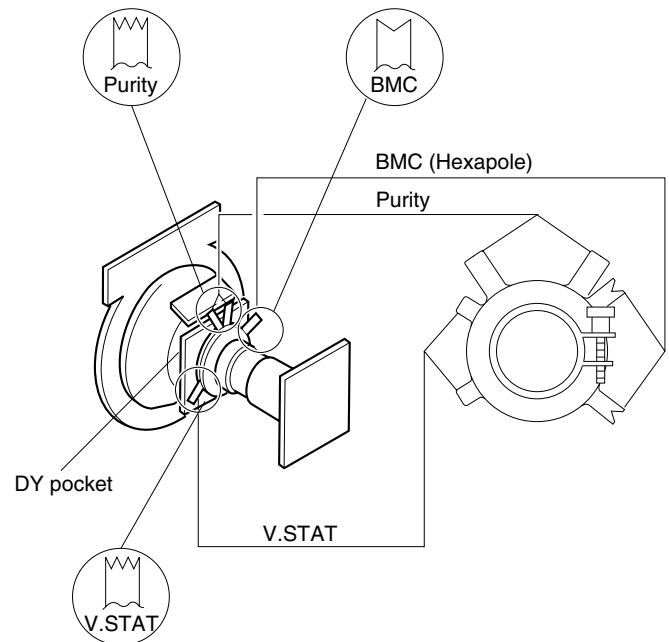
Preparation :

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Pic mode: Personal (Pic 90%, Brightness 50%, Col 50 %, Hue 50%, Shp 50%).

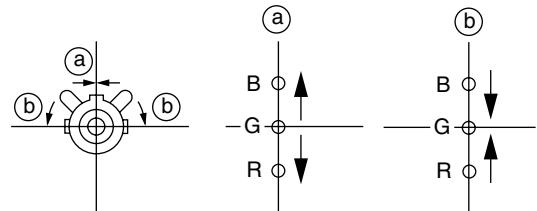
(1) Horizontal and Vertical Static Convergence



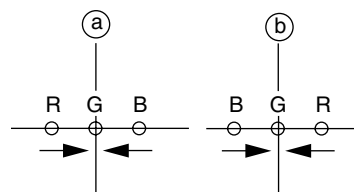
1. (Moving horizontally), adjust the H.STAT control so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other, so be sure to perform adjustments while tracking.)



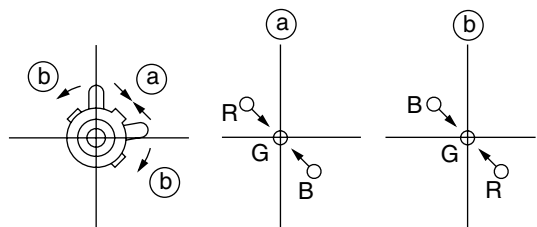
① V. STAT



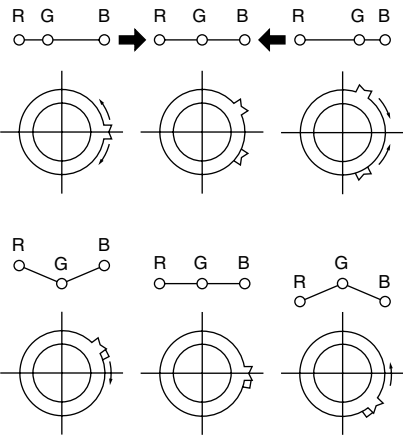
② H. STAT VR



③

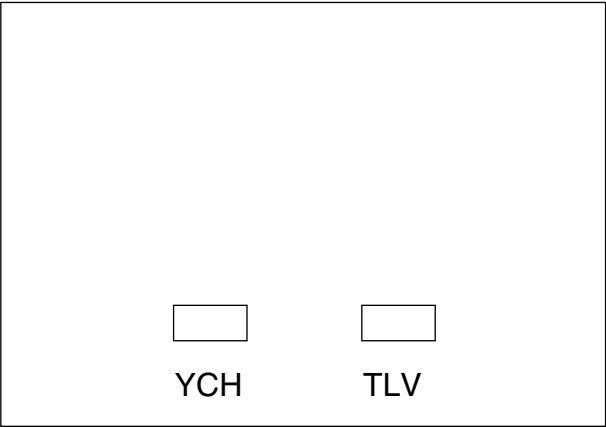


- ④ BMC (Hexapole) Magnet.
- If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.

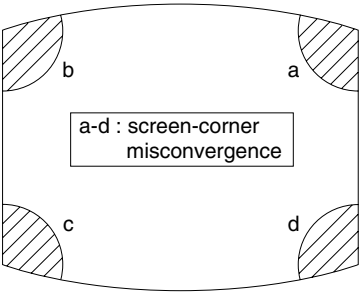


YCH Rotate YCH VOL on DY
TLV Insert TLH Correction Plate to DY Pocket (Left or Right)

ON DY:



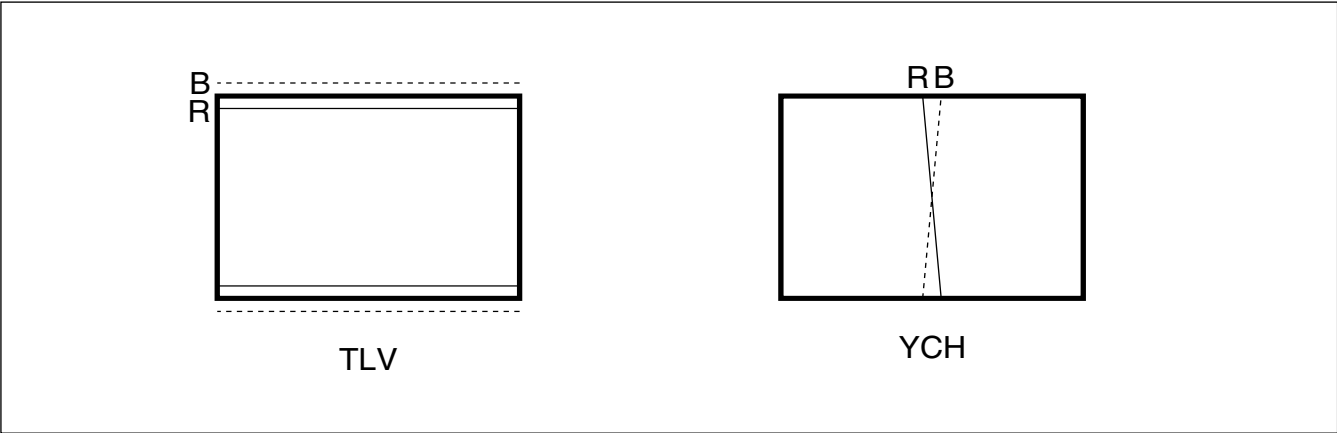
(3) Screen-corner Convergence

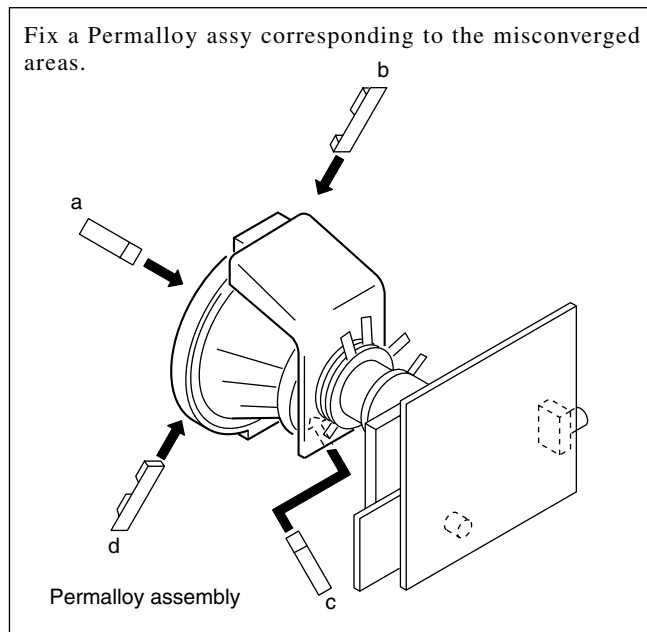


(2) Dynamic Convergence Adjustment

Preparation:

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence

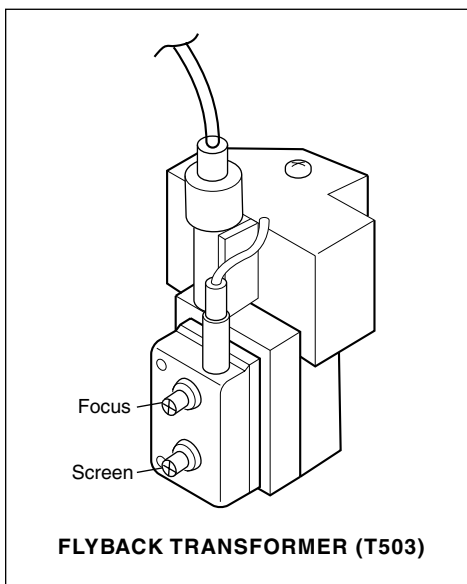




3-3. FOCUS ADJUSTMENT

FOCUS adjustment should be completed before W/B adjustment.

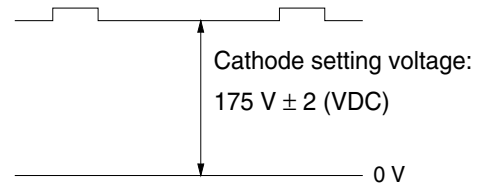
1. Receive digital monoscope pattern.
2. Set "Picture Mode" to "DYNAMIC".
3. Adjust focus VR so that the center of screen becomes just focus.
4. Change the receiving signal to white pattern and blue back.
5. Confirm magenta ring is not noticeable. In case magenta is very obvious, adjust focus VR to take balance of magenta ring and focus.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

- 1) Set the PICTURE to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Connect R, G and B of the C1 board cathode to the oscilloscope.
- 4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
- 5) Adjust G2 (screen) on the FBT until picture shows the point before cut off.

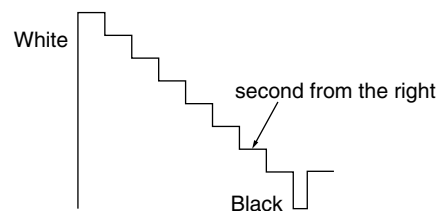


2. WHITE BALANCE ADJUSTMENT

- 1) Set to Service Mode (Refer Section 5-1: ADJUSTMENTS WITH COMMANDER).
- 2) Input white raster signal.
- 3) Set the PICTURE to minimum.
- 4) Select GCT (WHB 4) and BCT (WHB 5) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
- 5) Set the PICTURE to maximum.
- 6) Select GDR (WHB 1) and BDR (WHB 2) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
- 7) Write into the memory by pressing [MUTING] then [0].

3. SUB BRIGHT ADJUSTMENT

- 1) Set to service mode.
- 2) Input a staircase signal of black to white from the pattern generator.
- 3) BRIGHTNESS 50%.
PICTURE MINIMUM
- 4) Select SBR (WHB7) with [1] and [4], and adjust SBR (WHB7) level with [3] and [6] so that the second stripe from the right is dimly lit.



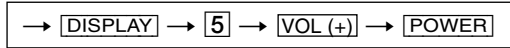
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments to this model can be performed using the supplied Remote Commander RM-952

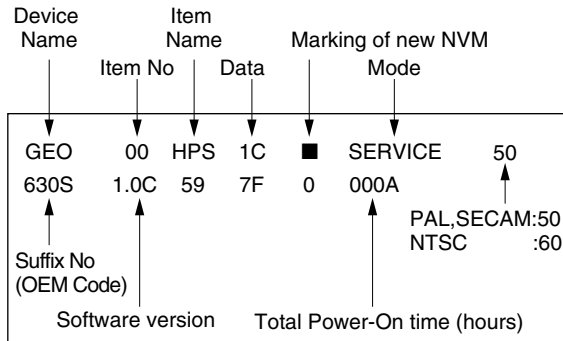
a. ENTERING SERVICE MODE

With the unit on standby



This operation sequence puts the unit into service mode.

The screen display is :



b. METHOD OF CANCELLATION FROM SERVICE MODE

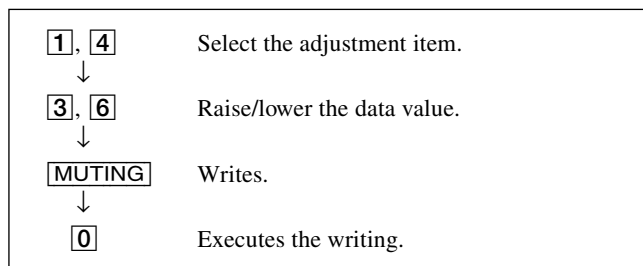
Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

c. METHOD OF WRITE INTO MEMORY

- 1) Set to Service Mode.
- 2) Press [1] (UP) and [4] (DOWN), to select the adjustment.
- 4) Press [MUTING] button to indicate WRITE on the screen.
- 5) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

- 1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- 3) Call the adjusted items again to confirm adjustments were made.



- [7], [0] All the data becomes the values in memory.
- [8], [0] All user control goes to the standard state.
- [5], [0] Service data initialization (Be sure not to use usually.)
- [2], [0] Write 50Hz adjustment data to 60Hz, or vice versa.

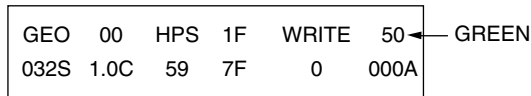
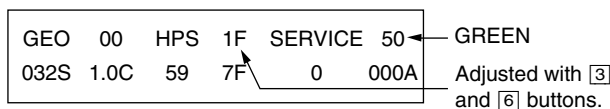
4-2. ADJUSTMENT METHOD

Item Number 00 of device GEO

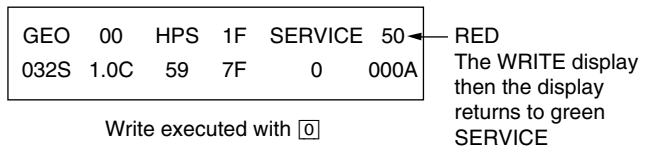
This explanation uses H-Position as an example.

1. Select "GEO 00 HPS" with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)

Example on screen display :-



Write with [MUTING]



Write executed with [0]

Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

- Note :**
1. In [WRITE], the data for all items are written into memory together.
 2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.

Adjustment Item Table

TVG	Functionality		Init.	Range	Function	Table & Note	Register No.bit	Device Name (Slave Address)	NVM Address			Remarks:
Category	No.	Name							Slave	Sub	Bit Range	Initial data for tables
GEO	00	HPS	7	3F	H POSITION	50/60Hz	—	CXA2159S(88H)	A0	A1/AE	7-2	
	01	HSZ	1F	3F	H SIZE	50/60Hz	—		A0	A0/AD	7-2	
	02	PAP	1F	3F	PIN AMP	50/60Hz	—		A0	A2/AF	7-2	
	03	TLT	7	0F	TRAPEZIUM	50/60Hz	—		A0	A4/B1	7-4	
	04	VPS	1F	3F	V POSITION	50/60Hz	—		A0	9E/AB	7-2	
	05	VSZ	1F	3F	V SIZE	50/60Hz	—		A0	9D/AA	7-2	
	06	SCO	7	0F	S CORRECTION	50/60Hz	—		A0	9F/AC	7-4	
	07	VLN	7	0F	V LINEARITY	50/60Hz	—		A0	9F/AC	3-0	
	08	BOW	7	0F	AFC BOW	50/60Hz	—		A0	A5/B2	7-4	
	09	AGL	7	0F	AFC ANGLE	50/60Hz	—		A0	A5/B2	3-0	
	0A	UPN	1F	3F	UPPER PIN	50/60Hz	—		A0	A3/B0	7-2	
	0B	LPN	1F	3F	LOWER PIN	50/60Hz	—		A0	A7/B4	7-2	
	0C	HBL	0	1	H BLANKING ON/OFF		—		A0	9A	1	
	0D	LBL	2	0F	LEFT H BLANKING	50/60Hz	—		A0	A6/B3	7-4	
	0E	RBL	0B	0F	RIGHT H BLANKING	50/60Hz	—		A0	A6/B3	3-0	
WHB	00	RDR	25	3F	R DRIVE	DYNAMIC/others	—	CXA2159S(88H)	A0	C0/BA	7-2	
	01	GDR	25	3F	G DRIVE	DYNAMIC/others	—		A0	C1/BB	7-2	
	02	BDR	25	3F	B DRIVE	DYNAMIC/others	—		A0	C2/BC	7-2	
	03	RCT	7	0F	R CUTOFF	SECAM/others	—		A0	C3/BD	3-0	
	04	GCT	7	0F	G CUTOFF	SECAM/others	—		A0	C4/BE	7-4	
	05	BCT	7	0F	B CUTOFF	SECAM/others	—		A0	C4/BE	3-0	
	06	BMN	15	1F	BRIGHTNESS MINIMUM DATA		—		A0	22	6-2	
	07	SBR	1F	3F	SUB BIGHTNESS CONTROL		—		A0	23	7-2	
SAJ	00	PMX	33	3F	PICTURE MAXIMUM DATA	non-Wide/Wide	—	CXA2159S(88H)	A0	21	7-2	
	01	SHU	8	0F	SUB HUE CONTROL	TV/Video	—		A0	24/38	5-2	
	02	SSH	3	0F	SUB SHARPNESS CONTROL	TV/Video	—		A0	25/36	7-4	
	03	SCL	1F	3F	SUB COLOR CONTROL	(NTSC/others)/WIDE(NTSC/others)	—		A0	37/26	7-2	

TVG	Functionality		Init.	Range	Function	Table & Note	Register No.bit	Slave Address	NVM			Remarks:
Category	No.	Name							Slave	Sub	Bit Range	Initial data for tables
OPB	00	OP1	FF	FF	OPTIONAL BITS 1 (SEE BELOW)	Option - Bits		CXP750097 (60H)	A0	2D	7-0	
	01	OP2	62	FF	OPTIONAL BITS 2 (SEE BELOW)				A0	2E	7-0	
	02	OP3	B1	FF	OPTIONAL BITS 3 (SEE BELOW)				A0	2F	7-0	
	03	OP4	02	FF	OPTIONAL BITS 4 (SEE BELOW)				A0	30	7-0	

Adjustment Item Table

TVG	Functionality		Init.	Range	Function	Table & Note	Register No.bit	Slave Address	NVM			Remarks:
Category	No.	Name							Slave	Sub	Bit Range	Initial data for tables
VP	00	EHT	4	0F	EHT COMP	50/60Hz	—	CXA2159S(88H)	A0	A4/B1	3-0	
	01	GMA	2	03	GAMMA CORRECTION	Refer NVM Map A4	—		A4	66/67/68/69	1-0	
	02	APG	0	1	GAMMA CONTROL SWITCH FOR PNC #3		—		A4	66/67/68/69	2	
	03	YDL	6	0F	Y DELAY	PAL/SECAM/NTSC	—		A0	B7/B9/B8	3-0	
	04	SST	1	03	SECAM ID START POSITION	SECAM/PAL	—		A4	6A/6C	5-4	
	05	SSP	1	03	SECAM ID STOP POSITION	SECAM/PAL	—		A4	6A/6C	7-6	
	06	RLM	0	3	RGB LIMIT		—		A0	83	1-0	
	07	SLV	2	03	SECAM ID LEVEL	SECAM/PAL	—		A4	6B/6D	1-0	
	08	SBF	22	3F	SECAM BELL FO	SECAM/PAL	—		A4	6B/6D	7-2	
	09	DYC	1	1	DYNAMIC COLOR ON/OFF		—		A0	8C	1	
	0A	ABL	1	1	ABL MODE SWITCHING	STANDARD Always 0	—		A0	8B	1	
	0B	VTH	1	1	ABL DETECTION VTH SWITCHING		—		A0	8B	0	
	0C	SFO	1	1	FO SWITCHING FOR SHARPNESS	NTSC/others	—		A4	5C/59	1	
	0D	DCX	1	1	DC TRANS. RATIO SWITCHING		—		A0	88	1	
	0E	SHT	1	1	PRE-/OVERSHOOT RATIO SWITCH	NTSC/others	—		A0	5D/5A	0	
	0F	HDW	0	1	H DRIVE PULSE WIDTH SWITCH		—		A0	80	6	
	10	AFC	1	03	AFC GAIN CONTROL	TV/Video/Text	—		A0	28/29/2A	1-0	
	11	HOS	7	0F	H OSCILLATION		—		A0	8E	7-4	
	12	HSS	0	1	SLICE LEVEL OF H SYNC SEP.		—		A0	8F	1	
	13	VSS	0	1	SLICE LEVEL OF V SYNC SEP.		—		A0	8F	0	
	14	HMS	1	1	MACRO VISION C/M OFF/ON	50/60Hz	—		A0	9D/AA	0	
AP	15	YUV	0	1	YUV SWITCH CONTROL		—		A0	80	2	
	16	CDV	1	3	CD MODE FOR VIDEO AND RF UNDER NO SIGNAL	video only	—		A0	2B	5-4	
	17	RON	1	1	R ON	not memorized	—		A0	81	2	
	18	GON	1	1	G ON	not memorized	—		A0	81	1	
	19	BON	1	1	B ON	not memorized	—		A0	81	0	
	1A	PON	1	1	P ON	not memorized	—		A0	80	7	
	1B	AXN	1	1	AXIS SW	NTSC/others (only for DYNAMIC)	—		A0	37/26	0	
	1C	RSL	0	1	RGB SEL		—		A0	8C	0	
	1D	VBW	1	3	VBLKW		—		A0	96	1-0	
	1E	RFP	0	1	REFP		—		A0	94	0	
	1F	JMP	0	1	JUMP		—		A0	9A	0	
	20	VMC	3	3	VM OFF		—		A0	83	3-2	
	00	INF	5	3F	INPUT ATTENUATION WHEN SURROUND OFF		—	BH3868AFS (80H)	A0	73	5-0	
	01	INS	0A	3F	INPUT ATTENUATION WHEN SURROUND ON (XG-ONLY)		—		A0	74	5-0	
	02	SEF	0	0F	SURROUND EFFECT CONTROL (XA-ONLY)		—		A0	76	6-3	
	03	PH1	3	3	PHASE 1 REGISTER SELECTION		—		A0	77	1-0	
	04	PH2	0	3	PHASE 2 REGISTER SELECTION (XG-ONLY)		—		A0	77	3-2	
	05	PH3	0	3	PHASE 3 REGISTER SELECTION (XG-ONLY)		—		A0	77	5-4	
	06	PH4	0	3	PHASE 4 REGISTER SELECTION (XG-ONLY)		—		A0	77	7-6	
	07	BCS	2	3	BASS CENTER SHIFT		—		A0	57	1-0	
	08	TCS	2	3	TREBLE CENTER SHIFT		—		A0	58	1-0	
	09	TRF	2	3	RF TREBLE OFFSET		—		A0	58	5-4	

Adjustment Item Table

TVG	Functionality		Init.	Range	Function	Table & Note	Register No.bit	Slave Address	NVM			Remarks:
Category	No.	Name							Slave	Sub	Bit Range	Initial data for tables
MSP	00	WST	15	FF	W/G STEREO THRESHOLD		–	MSP3415D (84H)	A0	60	7-0	
	01	WBT	EA	FF	W/G BILINGUAL THRESHOLD		–		A0	61	7-0	
	02	WLL	5	FF	W/G MONAURAL THRESHOLD		–		A0	62	7-0	
	03	WAC	0	0F	W/G AGREEMENT COUNT		–		A0	63	3-0	
	04	WDL	30	FF	W/G SEARCH DELAY		–		A0	64	7-0	
	05	NDL	20	FF	NICAM SEARCH DELAY		–		A0	65	7-0	
	06	SDL	10	FF	STEREO STATUS READ DELAY		–		A0	66	7-0	
	07	AGC	1	1	AGC SWITCH AUTO/CONSTANT		–		A0	68	7	
	08	REL	28	3F	AGC GAIN AT CONSTANT MODE		–		A0	68	6-1	
	09	CRM	0	1	CARRIER MUTING ON/OFF		–		A0	67	1	
	0A	ACO	1	1	AUDIO CLOCK OUT ON/OFF		–		A0	69	5	
	0B	FP	1B	7F	FM PRESCALE FOR NON-M SYSTEM		–		A0	6A	6-0	
	0C	FPM	32	7F	FM PRESCALE FOR M SYSTEM		–		A0	6B	6-0	
	0D	FH	36	7F	FM PRESCALE FOR HDEV		–		A0	6C	6-0	
	0E	FHM	65	7F	FM PRESCALE FOR HDEV AND M		–		A0	6D	6-0	
	0F	WGP	2A	7F	W/G PRESCALE		–		A0	6E	6-0	
	10	NIP	6D	7F	NICAM PRESCALE		–		A0	6F	6-0	
	11	ERR	50	FF	AUTO FM SWITCH THRESHOLD		–		A0	70	7-0	
	12	VOL	6D	FF	LOUD SPEAKER GAIN 7000H TO 7FF0H		–		A4	62	7-0	
TXT	00	TXH	0	3	TELETEXT HORIZONTAL POSITION		–	SAA5261(58H)	A4	55	1-0	
	01	TXV	0	3	TELETEXT VERTICAL POSITION		–		A4	55	5-4	
OPM	00	OSH	0A	3F	OSD H POSITION	Option-Misc	–	CXP750097(60H)	A0	27	7-2	
	01	COM	1	03	COMB SELECTION		–		A0	50	7-6	
	02	APC	1	1	APC SWITCH		–		A0	4F	5	
	03	TSY	0	03	TV SYS AT AUTO TV SYS		–		A0	4F	4-3	
	04	MUT	0	1	NO SIGNAL MUTE		–		A0	4F	0	
	05	AFM	0	1	AUTO FM SWITCH		–		A0	4F	1	
	06	RFB	0	3	C-BPF CONTROL		–		A0	50	5-4	
	07	TV0	0	7	TILT TO V-ANGLE OFFSET		–		A0	50	2-0	
	08	DBL	0	1	DISABLE BLUEBACK FUNCTION		–		A0	4F	2	

NOTE

- ■ shaded items are fixed data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory. In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**

ITEM INFORMATION

No. OPB0 OP1

Item	XTAL 4.43	XTAL 3.58	SECAM	2nd. Lang	B/G	I	D/K	M
KV-XA21M80 (E)	1	1	1	1	1	1	1	1
KV-XA21M83	1	1	1	1	1	1	1	1
KV-XA21M50 (EM)	1	1	1	1	1	1	1	1
KV-XA21M50 (GE)	1	1	1	1	1	1	1	1
KV-XA21M61 (EM)	1	1	1	1	1	1	1	1
KV-XA21M61 (GE)	1	1	1	1	1	1	1	1
KV-XA21M60 (S)	1	1	1	1	1	1	1	1
KV-XA21M80 (ME)	1	1	1	1	1	1	1	1

No. OPB1 OP2

Item	TOP	NICAM	HDEV	Thai Bil	Dis Fav.	DVD Input	AV Input	
KV-XA21M80 (E)	0	0	0	0	0	0	1	0
KV-XA21M83	0	0	0	0	0	0	1	0
KV-XA21M50 (EM)	0	0	0	0	0	0	1	0
KV-XA21M50 (GE)	0	0	0	0	0	0	1	0
KV-XA21M61 (EM)	0	1	1	0	0	0	1	0
KV-XA21M61 (GE)	0	1	1	0	0	0	1	0
KV-XA21M60 (S)	0	1	1	0	0	0	1	0
KV-XA21M80 (ME)	0	0	0	0	0	0	1	0

AV Input	00 = no AV Input	01 = 1 AV Input
	10 = 2 AV Input	11 = 3 AV Input
DVD Input	Effective only when "AV Input" is set to 3 AV Input	
Dis Fav.	Disable Favorite Channel (Effective For XF-L (21" & 14") Models Only)	

No. OPB2 OP3

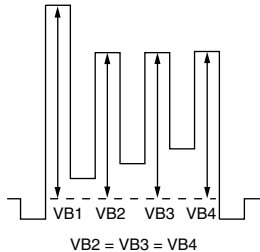
Item	PIC Rotate*1	2199 Curve*1	Auto PIC	Auto TV sys	US ST	AV Mono*1	11 KEY	Colour SW*2
KV-XA21M80 (E)	1	0	1	0	0	0	0	0
KV-XA21M83	0	0	1	0	0	0	0	0
KV-XA21M50 (EM)	1	0	1	0	0	0	0	0
KV-XA21M50 (GE)	1	0	1	0	0	0	0	0
KV-XA21M61 (EM)	1	0	1	1	0	0	0	0
KV-XA21M61 (GE)	1	0	1	1	0	0	0	0
KV-XA21M60 (S)	0	0	1	1	0	0	0	0
KV-XA21M80 (ME)	0	0	1	0	0	0	0	0

PIC Rotate* ¹	PIC Rotation Switch	0 = disabled,	1 = enabled
2199 Curve* ¹	2199 volume Curve Selection	0 = Others,	1 = 2199 Volume Curve.
Auto PIC* ³	Auto Picture Improvement	0 = off	PNC1/PNC2
		1 = activate	PNC1/PNC2
A-TVsys	Auto TV System in Auto Program	0 = disabled,	1 = enabled
US ST*	USA Stereo	0 = disabled,	1 = enabled
AV MONO* ¹	AV Mono model	0 = Stereo,	1 = Mono
			(No Balance & Surround selection)
11 Key	Front Key Selection	0 = 7 key model,	1 = 11 key model
Color SW* ²	Color Data Selection in Dynamic Mode	0 = 65 (No PIP),	1 = 57 (PIP)

4-3. PICTURE QUALITY ADJUSTMENTS

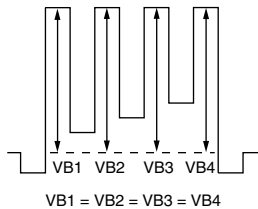
SUB COLOR ADJUSTMENT

1. Select Video.
2. Input a PAL color-bar.
3. Set to the following condition:
PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Set to Service Mode and select SAJ 'SCL' with [1] and [4] of the commander then adjust to VB2=VB3=VB4 with [3] and [6].
6. Press [MUTING] → [0] of the commander to write the data.
7. Adjust SAJ 'SCL' as step 3 to 5 when receiving NTSC color-bar.
8. Select the 'Wide' mode, write the 'same data-3 steps' for both PAL and NTSC input.



SUB HUE ADJUSTMENT

1. Select Video 1.
2. Input a NTSC 3.58 color-bar, video into Video 1.
3. Set the following condition:
PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Select SAJ O1 "SHU" with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with [3] and [6].



6. Press [MUTING] → [0] of the commander to write the data.
7. Adjust SAJ O1 "SHU" as step 3 to 6 when receiving TV mode.

4-4. DEFLECTION ADJUSTMENT

NORMAL MODE (50Hz)

1. Set to Service Mode.
2. Using the [1] and [4] button, select category GEO (Service Mode).
3. Raise/lower the data using the [3] and [6] buttons.
Select and adjust the following items to obtain optimum image.

Service Item

GEO : 00	HPS	H POSITION
01	HSZ	H SIZE
02	PAP	PIN AMP
03	TLT	TILT
04	VPS	V POSITION
05	VSZ	V SIZE
06	SCO	S CORRECTION
07	VLN	V LINEARITY
08	BOW	AFC BOW
09	AGL	AFC ANGLE
0A	UPN	UPPER CORNER PIN
0B	LPN	LOWER CORNER PIN

NORMAL MODE (60Hz)

11. Input 525/60Hz signal.
12. Using the [1] and [4] buttons select category GEO (Service Mode).
13. Select and adjust the following items to obtain optimum image.
Raise/lower the data with the [3] and [6] buttons.

Service Item

GEO : 00	HPS	H POSITION
01	HSZ	H SIZE
02	PAP	PIN AMP
03	TLT	TILT
04	VPS	V POSITION
05	VSZ	V SIZE
06	SCO	S CORRECTION
07	VLN	V LINEARITY
08	BOW	AFC BOW
09	AGL	AFC ANGLE
0A	UPN	UPPER CORNER PIN
0B	LPN	LOWER CORNER PIN

Note:

For Deflection Adjustment, set PICTURE MODE to "SOFT".

4-5. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number and check if the respective screen shows the normal picture.
In cases where items are not well adjusted, rectify the fine adjustment.
Write the data per each item number ([MUTING] + [0]).
4. Select item numbers "OPB00" (OP1), "OPB01" (OP2), "OPB02" (OP3) and "OPB03" (OP4) respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
(This will also cancel Service Mode.)

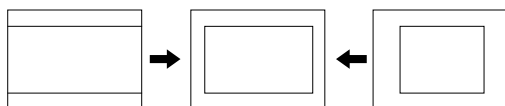
4-6. PICTURE DISTORTION ADJUSTMENT (1)

Item Number 00 – 0B

GEO 0 HPS (H POSITION)



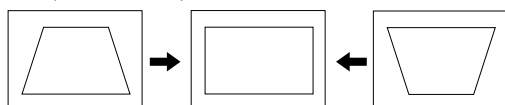
GEO 1 HSZ (H SIZE)



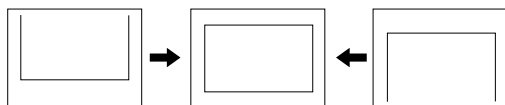
GEO 2 PAP (PIN AMP)



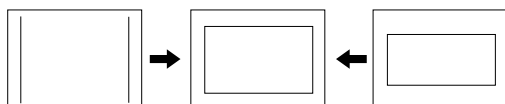
GEO 3 TLT (TRAPEZIUM)



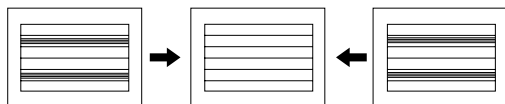
GEO 4 VPS (V POSITION)



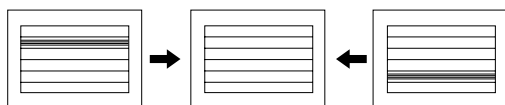
GEO 5 VSZ (V SIZE)



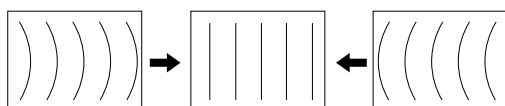
GEO 6 SCO (VERTICAL S-Correction)



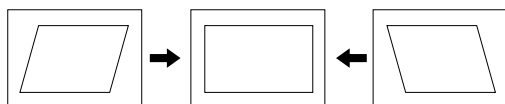
GEO 7 VLN (V LINEARITY)



GEO 8 BOW (AFC.BOW)

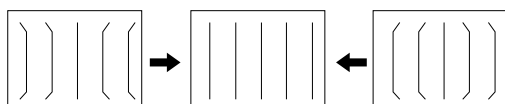


GEO 9 AGL (AFC.ANGLE)



GEO 0A UPN (UPPER CORNER PIN)

GEO 0B LPN (LOWER CORNER PIN)

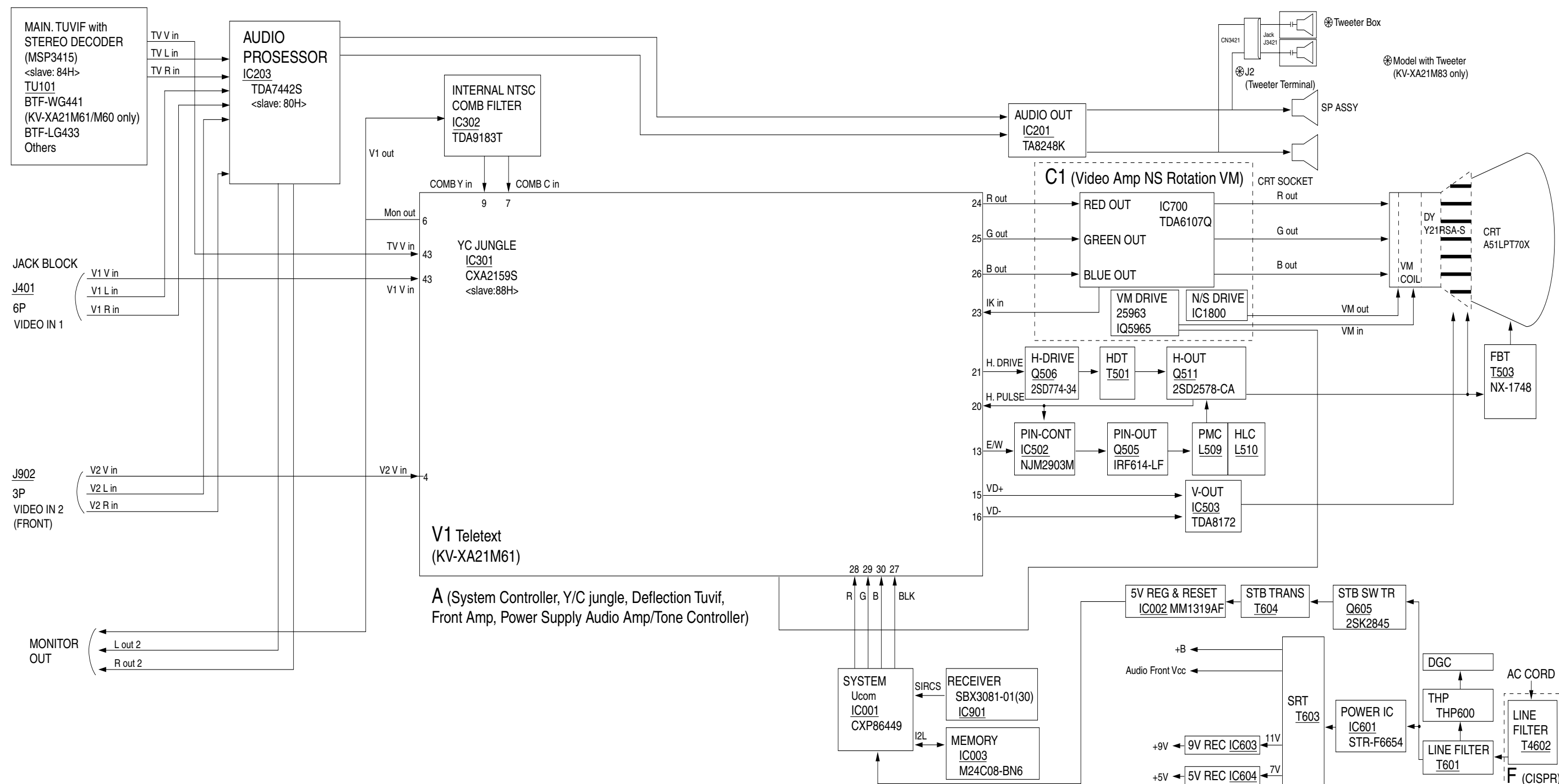


5-1. BLOCK DIAGRAM

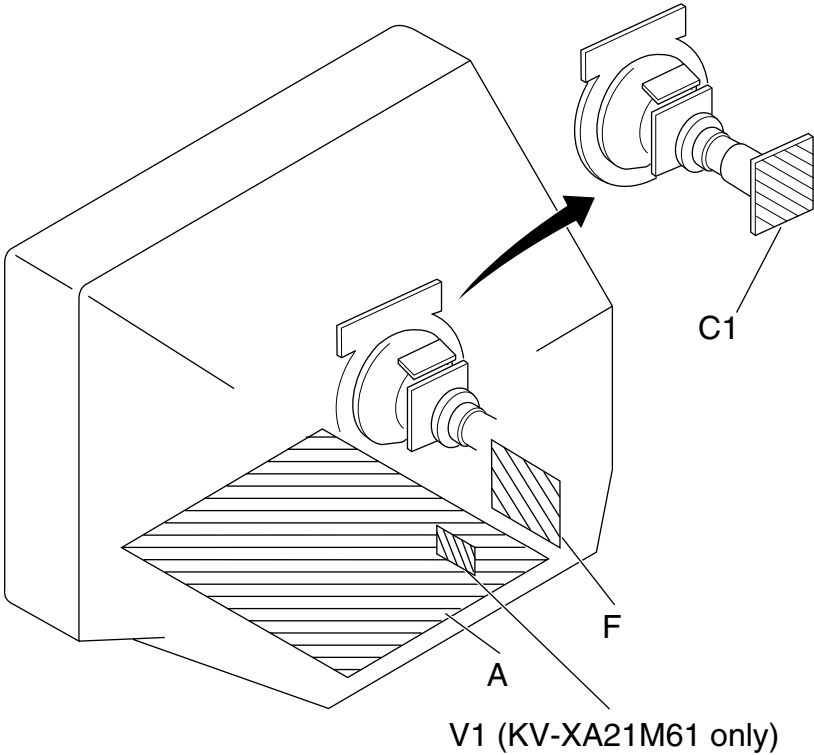
SECTION 5 DIAGRAMS

KV-XA21M80/XA2183/XA21M50/
KV-XA21M61/XA21M60
RM-952

KV-XA21M80/XA2183/XA21M50/
KV-XA21M61/XA21M60
RM-952



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAM

Note:

- All capacitors are in μF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
- $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
- Indication of resistance which does not have rating electrical power is as follows.

Pitch: 5 mm
Rating electrical power 1/4W (CHIP: 1/10W)

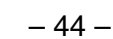
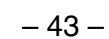
- : nonflammable resistor.
- Δ : internal component.
- : panel designation or adjustment for rrepair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Redings are taken with a color-bar signal input.**
no mark : PAL
() : SECAM
[] : NTSC 3.58
<< >> : NTSC 4.43
- **Readings are taken with a 10W MW digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in V.**
- * : Cannot be measured.
- Circled numbers are waveform references.
- : B +bus.
- : B -bus.
- : signal path.

Reference information

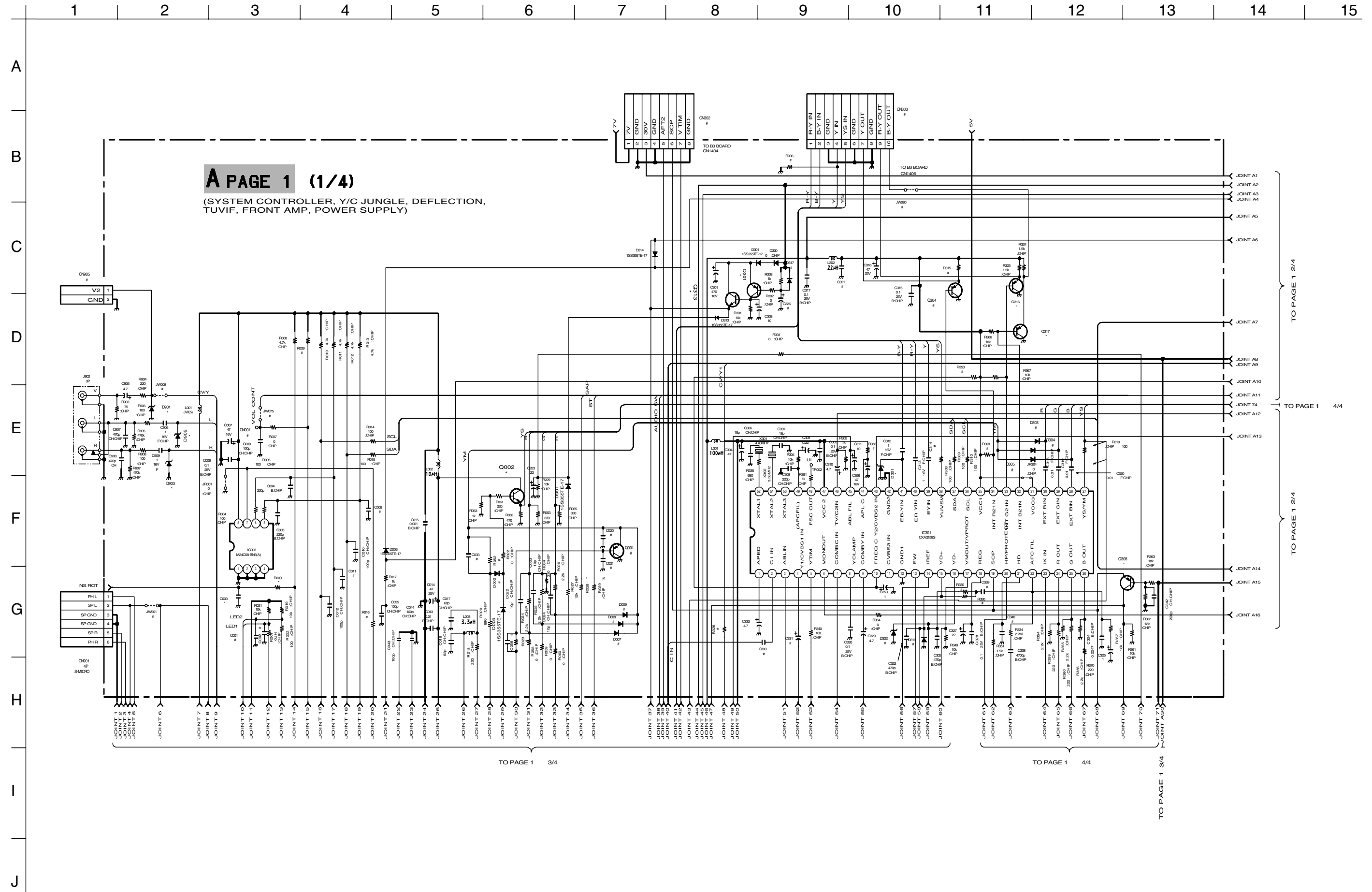
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
CAPACITOR	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

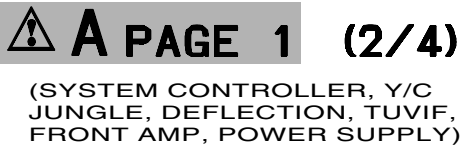
Note: The component identified by shading and mark Δ are critical for safety. Replace only with part number specified.

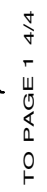
A
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B
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C
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D
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E
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F
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G
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H
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I
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J

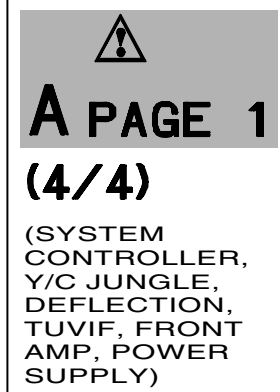


(2) Schematic Diagram of A Board

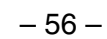


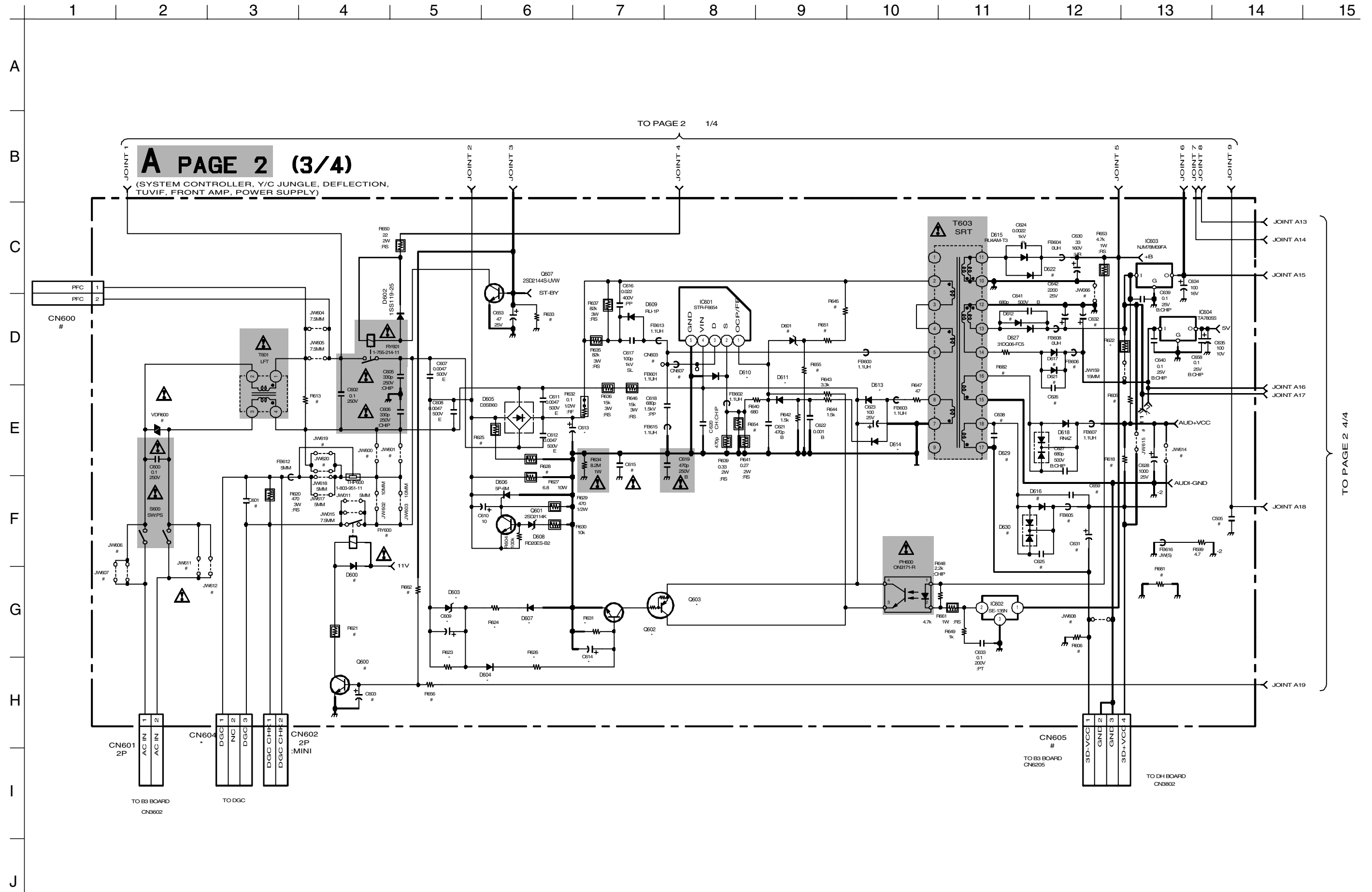


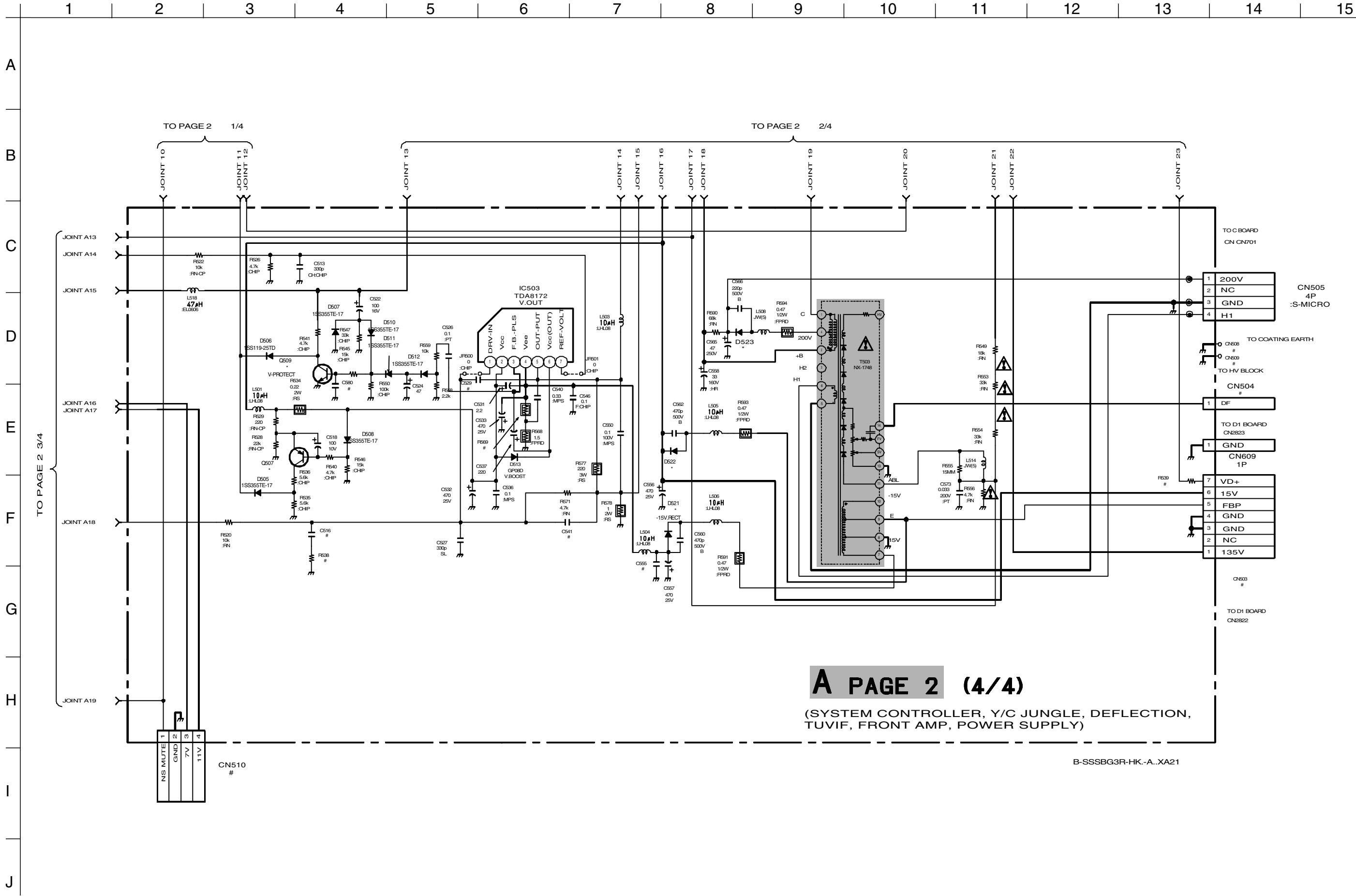




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A(1/2) Board * Mark List

	KV-XA25M50(EM)	KV-XA21M50(GE)	KV-XA21M60(S)	KV-XA21M61(EM)	KV-XA21M61(GE)	KV-XA21M80(ME)	KV-XA21M80(E)	KV-XA21M83
C003	#	#	100P :CHIP	#	#	100 :CHIP	#	100P :CHIP
C609	#	100	#	#	100	100	100	100
C613	180 450V	330 450V	180 450V	180 450V	330 450V	330 450V	330 450V	330 450V
C614	#	10	#	#	10	10	10	10
CN301	#	#	#	7P	7P	#	#	#
CN307	#	#	#	7P	7P	#	#	#
CN507	4P	4P	#	4P	4P	4P	4P	4P
CN602	2P	2P	#	2P	2P	2P	2P	2P
CN604	3P	3P	3P	2P	3P	3P	3P	3P
D010	NNCD9.1A-T1	NNCD9.1A-T1	#	NNCD9.1A-T1	NNCD9.1A-T1	NNCD9.1A-T1	NNCD9.1A-T1	NNCD9.1A-T1
D011	NNCD9.1A-T1	NNCD9.1A-T1	#	NNCD9.1A-T1	NNCD9.1A-T1	NNCD9.1A-T1	NNCD9.1A-T1	NNCD9.1A-T1
D100	#	#	MA111-(K8)-S0	1SS355TE-17	1SS355TE-17	#	#	#
D203	1SS302	1SS302	DA204K	DA204K	1SS302	1SS302	1SS302	1SS302
D309	RD5.1SB-T2	RD5.1SB-T2	UDZS-TE17-5.1B	RD5.1SB-T2	RD5.1SB-T2	RD5.1SB-T2	RD5.1SB-T2	RD5.1SB-T2
D316	RD6.8SB-T1	RD6.8SB-T1	DTZ-TT11-6.8B	RD6.8SB-T1	RD6.8SB-T1	RD6.8SB-T1	RD6.8SB-T1	RD6.8SB-T1
D320	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D321	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D401	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D402	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D403	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D404	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D405	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D406	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D504	EL1Z	EL1Z	EU2A	EL1Z	EL1Z	EL1Z	EL1Z	EL1Z
D517	RS3FS	RS3FS	ERC06-15S	RS3FS	RS3FS	RS3FS	RS3FS	RS3FS
D521	EL1Z	EL1Z	EU2A	EL1Z	EL1Z	EL1Z	EL1Z	EL1Z
D522	EL1Z	EL1Z	EU2A	EL1Z	EL1Z	EL1Z	EL1Z	EL1Z
D523	EL1Z	EL1Z	EU2A	EL1Z	EL1Z	EL1Z	EL1Z	EL1Z
D603	#	RD33EB3T	#	#	RD33EB3T	RD33EB3T	RD33EB3T	RD33EB3T
D604	#	RGPO2-17EL-6433	#	#	RGPO2-17EL-6433	RGPO2-17EL-6433	RGPO2-17EL-6433	RGPO2-17EL-6433
D607	#	MA111-(K8),S0	#	#	MA111-(K8),S0	MA111-(K8),S0	MA111-(K8),S0	MA111-(K8),S0
D610	11EQS04	11EQS04	AK04V0	11EQS04	11EQS04	11EQS04	11EQS04	11EQS04
D611	AU-01Z-V1	AU-01Z-V1	10ELS2N-TB5	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1
D613	AU-01Z-V1	AU-01Z-V1	10ELS2N-TB5	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1
D614	AU-01Z-V1	AU-01Z-V1	10ELS2N-TB5	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1	AU-01Z-V1
D638	11ES2	11ES2	11ES2-NTA2B	11ES2	11ES2	11ES2	11ES2	11ES2
D901	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D902	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D903	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D904	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
D905	RD9.1S-B	RD9.1S-B	UDZS-TE17-9.1B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B	RD9.1S-B
IC001	CXP86449-630S	CXP86449-630S	CXP86449-632S	CXP86449-630S	CXP86449-630S	CXP86449-630S	CXP86449-630S	CXP86449-630S
IC100	#	#	S-80743AL-A7-S	S-80743AL-A7-S	S-80743AL-A7-S	#	#	#
IC901	SBX1981-51(21)	SBX1981-51(21)	UD6124G-212	SBX1981-51(21)	SBX1981-51(21)	SBX1981-51(21)	SBX1981-51(21)	SBX1981-51(21)
JR008	#	#	0 :CHIP	0 :CHIP	0 :CHIP	#	#	#
JR107	#	#	0 :CHIP	0 :CHIP	0 :CHIP	#	#	#
JR109	0 :CHIP	0 :CHIP	#	#	#	0 :CHIP	0 :CHIP	0 :CHIP

KV-XA21M80/XA2183/XA21M50/
KV-XA21M61/XA21M60
RM-952

KV-XA21M80/XA2183/XA21M50/
KV-XA21M61/XA21M60
RM-952

A(2/2) Board * Mark List

	KV-XA25M50(EM)	KV-XA21M50(GE)	KV-XA21M60(S)	KV-XA21M61(EM)	KV-XA21M61(GE)	KV-XA21M80(ME)	KV-XA21M80(E)	KV-XA21M83
Q002	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q101	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q205	UN2213	UN2213	DTC144EKA	UN2213	UN2213	UN2213	UN2213	UN2213
Q206	UN2213	UN2213	DTC144EKA	UN2213	UN2213	UN2213	UN2213	UN2213
Q207	UN2213	UN2213	DTC144EKA	UN2213	UN2213	UN2213	UN2213	UN2213
Q301	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q302	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q303	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q305	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q306	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q307	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q308	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q312	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q313	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q314	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q315	UN2213	UN2213	DTC144EKA	UN2213	UN2213	UN2213	UN2213	UN2213
Q316	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q317	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q403	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q404	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q503	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q507	2SA1162-G	2SA1162-G	2SA1037AK-T146	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G	2SA1162-G
Q509	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q602	#	2SC2712-YG	#	#	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q603	#	DTA114EKA-T146	#	#	DTA114EKA-T146	DTA114EKA-T146	DTA114EKA-T146	DTA114EKA-T146
Q606	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q608	2SC2712-YG	2SC2712-YG	2SC1623-L5L6	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG	2SC2712-YG
Q901	UN2213	UN2213	DTC144EKA	UN2213	UN2213	UN2213	UN2213	UN2213
Q902	UN2213	UN2213	DTC144EKA	UN2213	UN2213	UN2213	UN2213	UN2213
R003	10K :CHIP	10K :CHIP	0 :CHIP	10K :CHIP	10K :CHIP	10K :CHIP	10K :CHIP	0 :CHIP
R028	#	#	10K :CHIP	10K :CHIP	10K :CHIP	#	#	#
R101	#	#	100 :CHIP	100 :CHIP	100 :CHIP	#	#	#
R102	#	#	100 :CHIP	100 :CHIP	100 :CHIP	#	#	#
R230	6.8K :CHIP	6.8K :CHIP	10K :CHIP	10K :CHIP	10K :CHIP	6.8K :CHIP	6.8K :CHIP	6.8K :CHIP
R375	#	#	100 :CHIP	100 :CHIP	100 :CHIP	#	#	#
R622	33 3W :RS	33 3W :RS	8.2 3W :RS	8.2 3W :RS	33 3W :RS	33 3W :RS	33 3W :RS	33 3W :RS
R623	#	#	#	#	82K :CHIP	82K :CHIP	82K :CHIP	82K :CHIP
R624	#	#	#	#	47K :CHIP	47K :CHIP	47K :CHIP	47K :CHIP
R626	#	#	#	#	1.0K :CHIP	1.0K :CHIP	1.0K :CHIP	1.0K :CHIP
R631	#	#	#	#	47K :CHIP	47K :CHIP	47K :CHIP	47K :CHIP
TU101	BTF-LG433	BTF-LG433	BTF-WG441	BTF-WG441	BTF-WG441	BTF-LG433	BTF-LG433	BTF-LG433

5-4. VOLTAGE LIST MEASUREMENT

A (1/2) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC001	1	0	IC003	1	0		5	4.8
	2	4.5 <4.0>		2	0		6	4.3
	3	0.5 <0.3>		3	0		7	1.5
	4	5.0		4	0		8	3.8
	5	5.0		5	5.0		9	4.9
	6	0		6	5.0		10	3.8
	7	4.0		7	0		11	5.0
	8	4.8		8	5.0		12	0
	9	0.5	IC100	1	4.8		13	3.8
	10	4.8		2	4.8		14	2.3
	11	5.0		3	0		15	3.5
	12	0	IC201	1	0		16	3.4
	13	2.1		2	19.6		17	5.4
	14	2.0		3	10.4		18	7.6
	15	5.0		4	20.0		19	0.8
	16	5.0		5	10.5		20	3.6
	17	0		6	19.6		21	3.0
	18	0		7	0		22	3.8
	19	2.0 <2.7>		8	20.0		23	3.0 <3.5>
	20	0.4		9	10.3		24	1.5
	21	5.0		10	0.6		25	1.5
	22	0		11	0		26	1.6
	23	5.0		12	0		27	0
	24	0.4		13	0		28	4.5
	25	0		14	0.6		29	4.5
	26	5.0		15	0		30	4.5
	27	4.8	IC203	1	4.4		31	8.8
	28	5.0		2	4.4		32	4.1
	29	0		3	4.4		33	4.1
	30	0		4	4.4		34	3.6
	31	0		5	4.4		35	8.8
	32	0		6	4.4		36	4.5
	33	5.0		7	4.4		37	4.5
	34	0		8	4.4		38	0
	35	0		9	4.4		39	4.1
	36	2.3		10	4.4		40	4.7
	37	2.5		11	4.4		41	4.7
	38	4.9		12	4.4		42	0
	39	5.0		13	4.4		43	5.1
	40	0		14	4.4		44	4.9
	41	0.4		15	4.4		45	7.1 <6.5>
	42	0.4		16	4.4		46	5.0
	43	0		17	4.4		47	8.7
	44	5.0		18	4.4		48	0.2
	45	5.0		19	4.4		49	5.1 (4.3) <0>
	46	4.6		20	0		50	0
	47	5.0		21	4.5		51	0
	48	4.4		22	4.5		52	#
	49	0	IC301	23	4.4	IC302	1	0.9
	50	2.0		24	8.8		2	0
	51	0		25	0		3	1.3
	52	5.0 <0>		26	3.7		4	0
IC002	1	0		27	3.7		5	4.9
	2	5.0		28	4.4		6	4.9
	3	4.9	IC301	1	3.4		7	1.0
	4	7.3		2	5.0		8	0
	5	5.0		3	2.4 <1.9>		9	0.5
	6	0		4	5.0		10	0
	7	0					11	0

A (2/2) BOARD VOLTAGE LIST

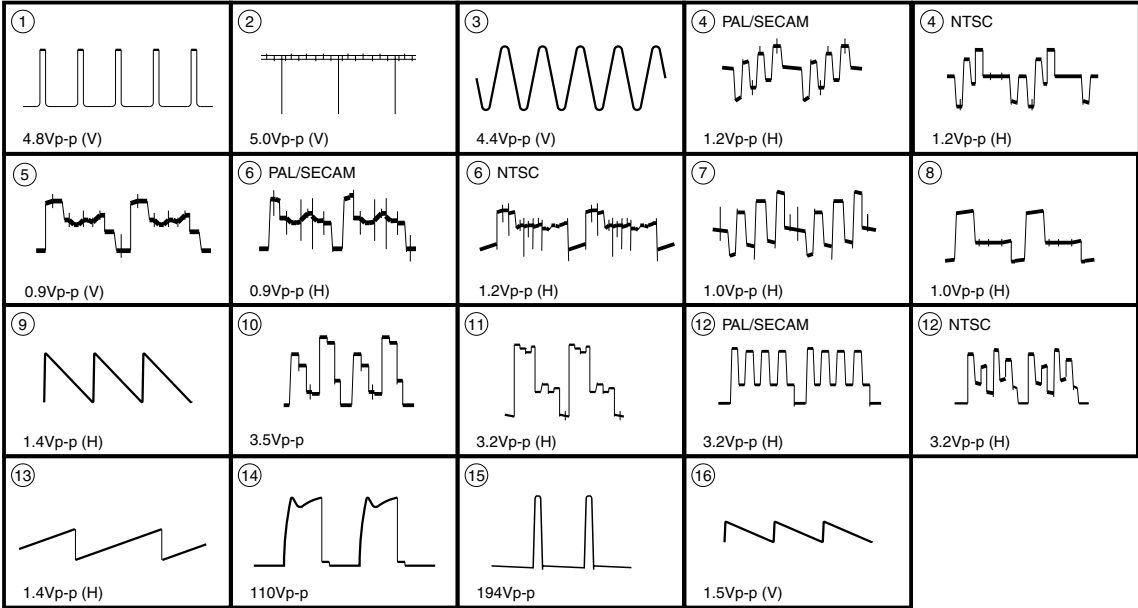
Ref	Pin No	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
	12	1.6	Q206	B	0	Q403	B	4.5
	13	0		C	0		C	0
	14	1.5		E	0		E	5.2
	15	0	Q207	B	0	Q404	B	4.5
	16	1.5		C	0		C	0
IC502	1	1.3		E	0		E	5.2
	2	3.6	Q301	B	12.8	Q503	B	0
	3	1.2		C	0		C	3.6
	4	0		E	12.6		E	0
	5	3.4	Q302	B	1.5	Q505	D	8.6 <8.2>
	6	3.0		C	8.1		G	6.9
	7	6.8		E	0.9		S	0
	8	8.9	Q303	B	8.1	Q506	B	-0.4
IC503	1	1.0		C	1.5		C	48.6
	2	13.6		E	8.7		E	0
	3	-12.4 <12.1>	Q305	B	8.1	Q507	B	13.0
	4	-13.6		C	1.8		C	0
	5	0.2		E	8.7		E	13.5
	6	13.8	Q306	B	1.5	Q509	B	0.6
	7	1.0		C	8.1		C	0.1
IC601	1	3.3 (1.8)		E	0.9		E	0
	2	1.7 (0.2)	Q307	B	4.3	Q511	B	0
	3	113.3		C	8.7		C	122.6
	4	19.0 (17.5) <19.3>		E	3.7		E	0
	5	1.6 (0.1) <1.9>	Q308	B	3.6	Q600	B	0
IC602	1	121.1		C	0.5		C	0
	2	135.0		E	0.8		E	0
	3	0	Q310	B	0.2	Q604	B	133.9
IC603	I	12.8		C	4.9		C	0
	G	0		E	0		E	134.3
	O	8.9	Q312	B	5.3	Q605	D	121.6
IC604	I	10.5		C	0		G	-0.4 <-0.6>
	G	0		E	7.0 <6.5>		S	-2.1
	O	5.0	Q313	B	0	Q606	B	-1.5
IC901	1	4.9		C	12.7		C	-0.5
	2	0		E	0		E	-2.1
	3	4.7 <4.1>	Q314	B	0.5	Q607	B	0.7
Q002	B	0		C	0		C	0
	C	5.0		E	1.0		E	0
	E	0	Q315	B	0	Q608	B	0
Q101	B	2.8		C	1.6 <1.9>		C	0.7
	C	8.9		E	0		E	0
	E	2.2	Q316	B	4.1	Q901	B	0.1
Q201	B	0		C	0		C	5.0
	C	0		E	4.7		E	0.1
	E	0	Q317	B	4.1	Q902	B	0
Q202	B	0		C	0		C	5.0
	C	0		E	4.7		E	0
	E	0	Q401	B	0	PH600	1	128.7
Q205	B	0		C	0		2	127.7
	C	10.3		E	0		3	3.6
	E	0	Q402	B	0		4	17.5
				C	0			
				E	0			

C1 BOARD VOLTAGE LIST

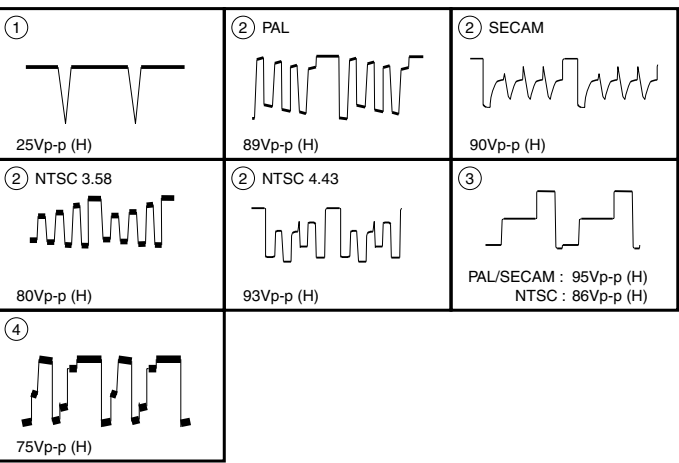
Ref	Pin No	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC700	1	1.6	J701	G2	325.8 (328.2) <323.4>	Q5963	B	134.1
	2	1.6		H1	0		C	67.1
	3	1.5		KB	155.8 (153.2) <150.3>		E	134.7
	4	0		KG	158 (155.7) <153.7>	Q5965	B	0.9
	5	4.9<5.3>		KR	160.8 <154.57>		C	67.1
	6	194.5	Q700	B	4.5		E	0.3
	7	160.5 <154>		C	3.6 (3.4) <4.3>	Q5967	B	5.9
	8	157.4 (155) <153>		E	4.9 <5.3>		C	8.9
	9	155.3 (152.2) <150>	Q1802	B	0.3		E	5.6
IC1800	1	6.7		C	3.6	Q5968	B	5.3
	2	6.7		E	0		C	0
	3	6.7	Q5961	B	2.4		E	5.6
	4	6.6		C	8.9			
	5	0		E	1.8			
	6	6.6	Q5962	B	2.4			
	7	6.6		C	5.3			
	8	6.6		E	1.8			
	9	6.6						
	10	13.1						

5-5. WAVEFORMS

A BOARD WAVEFORMS



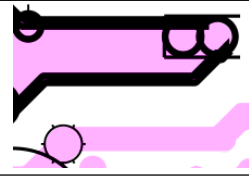
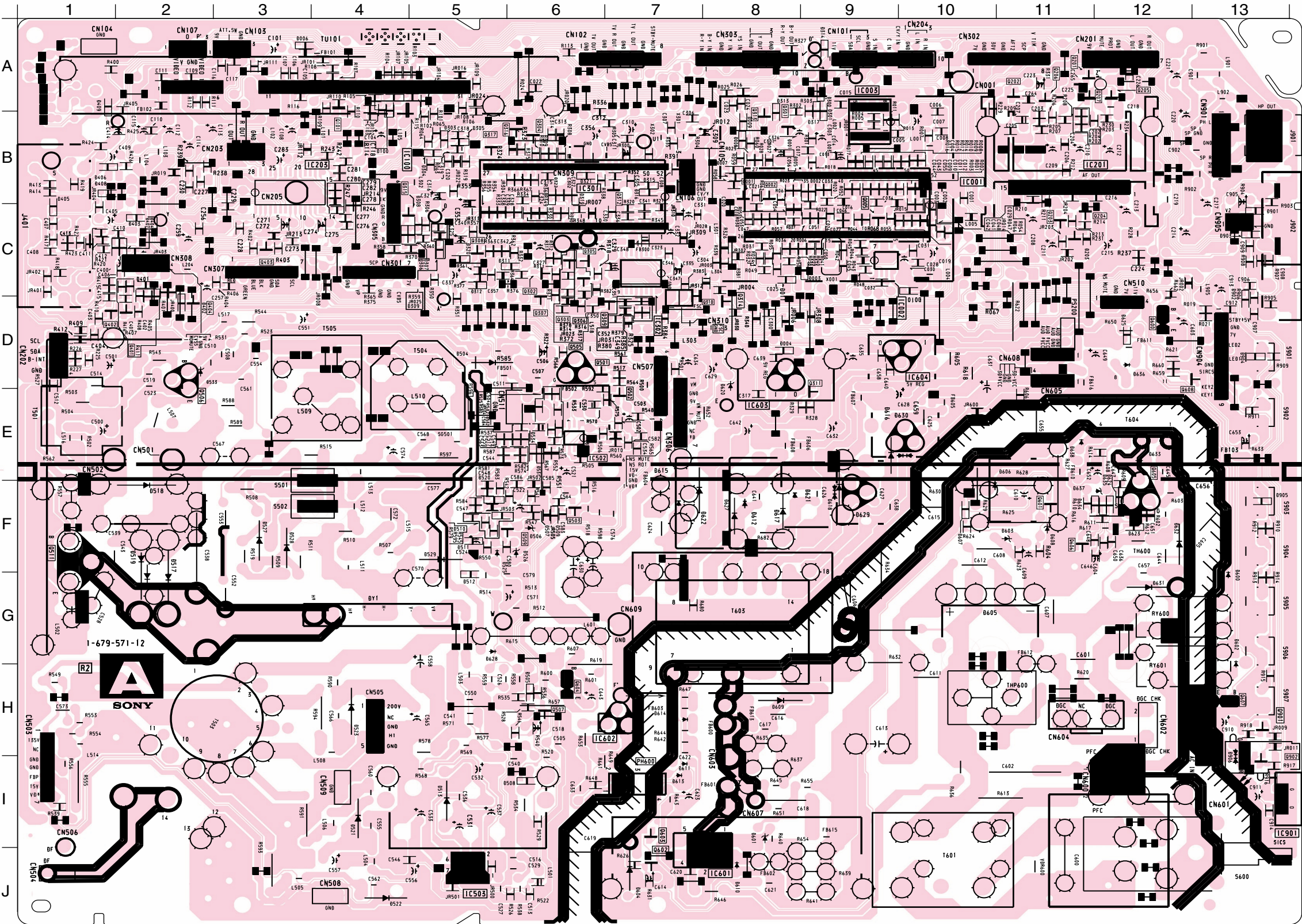
C BOARD WAVEFORMS



5-6. PRINTED WIRING BOARDS AND PARTS LOCATION
PRINTING WIRING BOARD

A [SYSTEM CONTROLLER, Y/C JUNGLE,
DEFLECTION, TUVIF, FRONT AMP, POWER SUPPLY]

- A Board -



NOTE:
The circuit indicated at left contains high voltage of over
1220 Vp-p. Please pay attention when inspecting or re-
pairing it to prevent an electric shock.

A BOARD

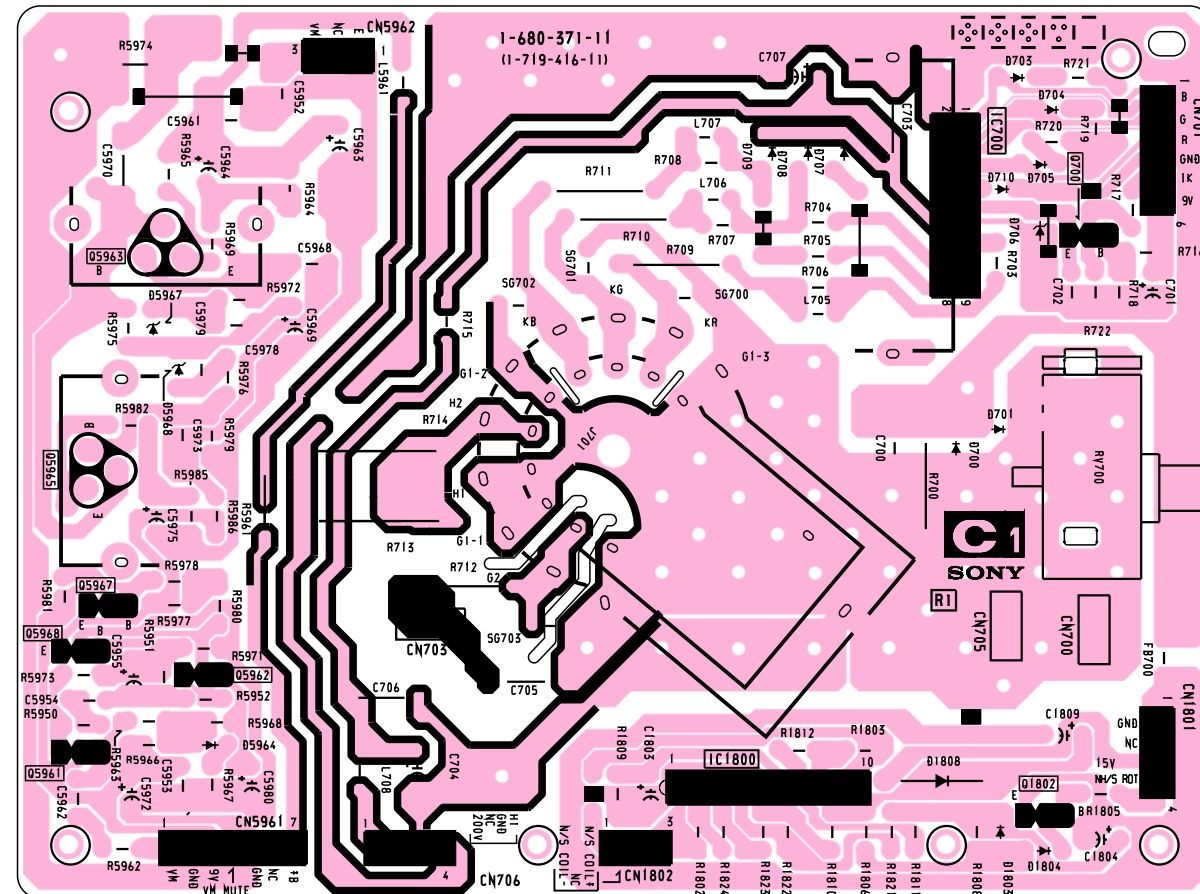
IC		Q606	F-11	D531	E-6
IC001		Q607	H-13	D533	D-2
IC002		Q608	D-12	D534	E-6
IC003		Q901	H-13	D600	G-13
IC100		Q902	H-13	D601	I-8
IC201		DIODE		D602	G-13
IC203		D001	B-8	D603	F-11
IC301		D003	C-9	D604	J-7
IC302		D004	D-8	D605	G-10
IC502		D005	B-8	D606	E-11
IC503		D006	A-3	D607	F-10
IC601		D007	B-8	D608	F-11
IC602		D008	B-8	D609	H-8
IC603		D009	B-8	D610	J-8
IC604		D100	B-4	D611	I-7
IC901		D203	C-11	D612	F-8
TRANSISTOR		D300	A-9	D613	I-7
		D301	B-9	D616	E-9
Q001		D303	B-5	D617	F-8
Q002		D304	B-5	D618	F-9
Q005		D305	B-5	D620	D-8
Q101		D306	C-5	D621	F-9
Q201		D307	C-5	D622	F-8
Q202		D308	B-5	D623	F-12
Q203		D309	D-5	D624	F-12
Q204		D312	C-5	D625	D-12
Q205		D313	A-8	D627	F-8
Q206		D314	A-9	D628	G-5
Q207		D315	B-7	D629	F-9
Q301		D317	B-9	D630	E-10
Q302		D319	B-6	D631	G-10
Q303		D320	C-5	D632	F-12
Q304		D321	B-6	D633	E-12
Q305		D322	B-6	D634	F-11
Q306		D401	C-2	D635	F-12
Q307		D402	D-2	D636	D-12
Q308		D403	C-2	D637	F-11
Q309		D404	C-2	D638	E-11
Q310		D405	B-1	D639	E-7
Q311		D406	B-1	D901	C-13
Q312		D407	C-2	D902	C-13
Q313		D408	B-1	D903	C-13
Q314		D409	A-1	D904	C-13
Q315		D504	D-5	D905	F-13
Q316		D505	H-6	D906	H-13
Q317		D506	F-6		
Q401		D507	F-6		
Q402		D508	I-7		
Q403		D509	F-6		
Q404		D510	F-5		
Q501		D511	F-5		
Q502		D512	G-5		
Q503		D513	I-5		
Q505		D517	F-2		
Q506		D518	F-2		
Q507		D519	F-2		
Q509		D520	E-5		
Q511		D521	I-4		
Q600		D522	J-4		
Q601		D523	H-4		
Q602		D525	F-5		
Q603		D526	F-6		
Q604		D527	F-3		
Q605		D528	F-3		
		D529	F-5		

PRINTING WIRING BOARD

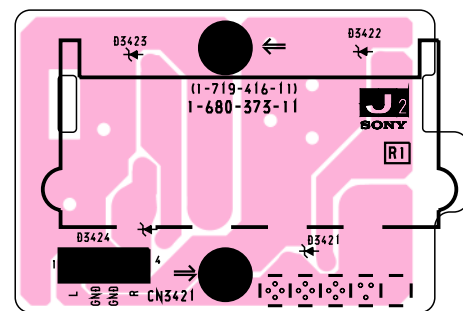
C1 [AUDIO PROCESSOR, AUDIO AMP,
SUB TUNER, AV IN/OUT, VM DRIVER]

J2 [DVD, 3D TERMINAL]

– C1 Board –



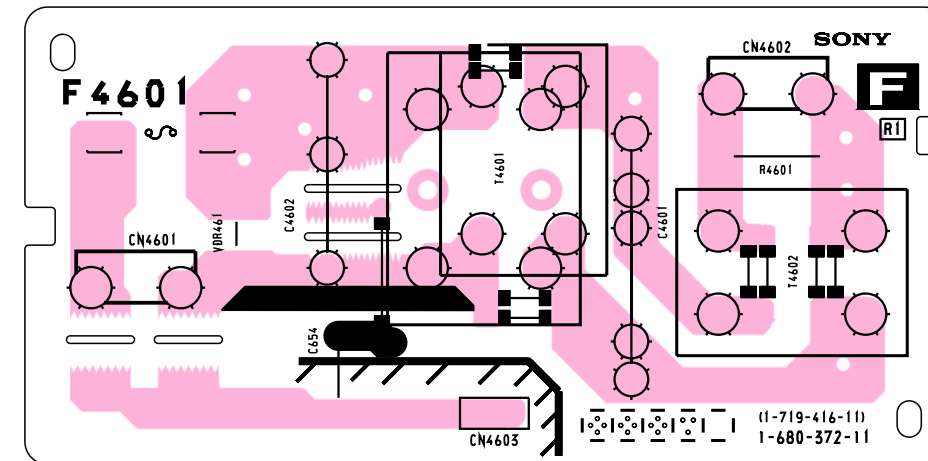
– J2 Board – (KV-XA21M83)



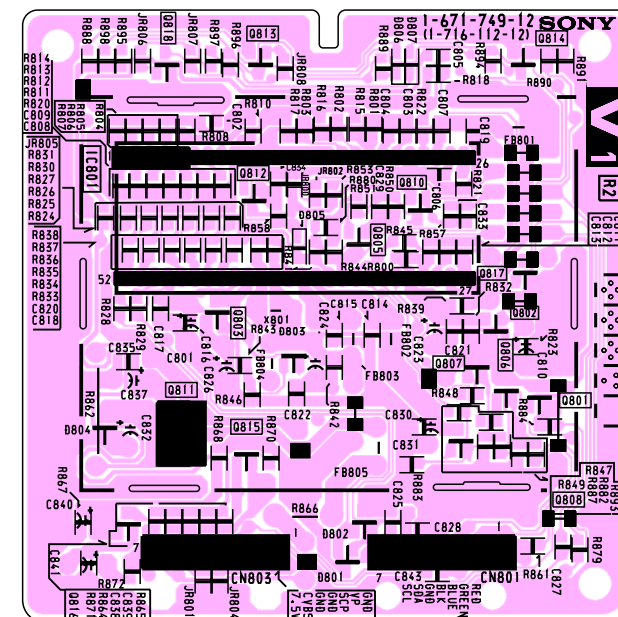
- 71 -

F [FRONT AV IN, SENSOR, POWER SW]

- F Board -



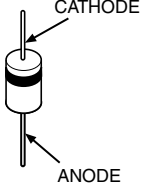
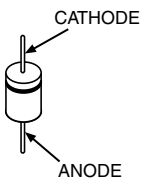
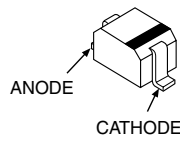
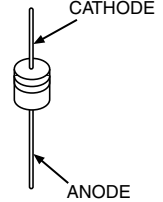
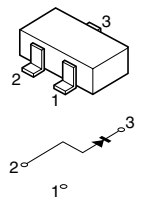
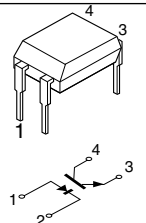
– V1 Board – (KV-XAM61(EM)/M61(GE))



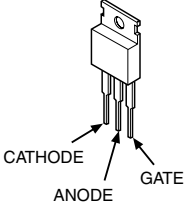
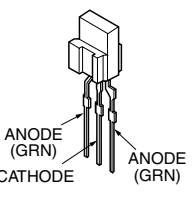
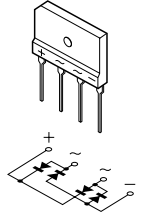

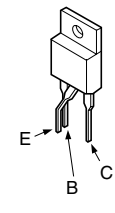
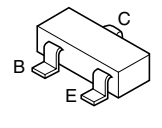
- 72 -

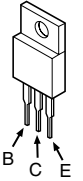
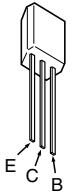
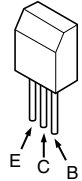
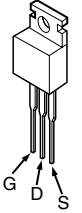
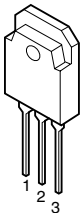
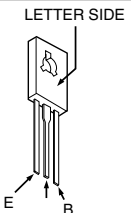
5-7 SEMICONDUCTORS

DIODE

					
AU-01Z-V1 EL1Z ERA22-08 ERC04-06SE GP08D HSS83TD 31DQ06-FC5 RU4AM-T3 RS3FS	ERD29-08J	DTZ-TT11-15B DTZ10B MA111-(K8).S0 RD5.1SB-T2 RD5.6S-B RD9.1S-B 1SS355TE17	D1NS4 NEQS04 RD6.8ES-B1 RD6.8SB-T1 RD20ES-B2 RD30ES-B2 RD39-ES-B2 1SS119-25 11EQS04 11ES2	1SS302	ON3171-R

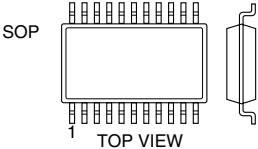
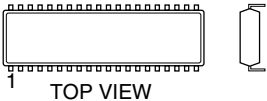
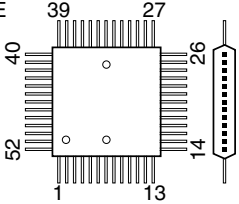
TRANSISTOR

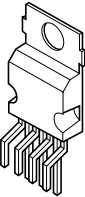
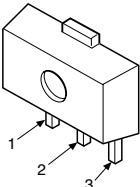
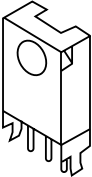
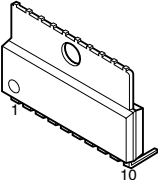
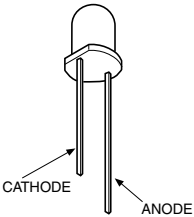
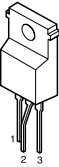
					
5P-6M	SPB-26MVWF	D3SB60	RN4Z	2SK2845-LB102	UN2213 UN2216 2SC2712-YG 2SA1162-G 2SD2114K

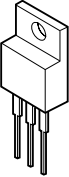
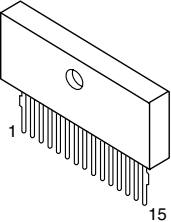
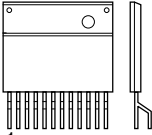
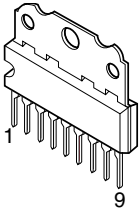
					
2SC4793 2SA1837	2SA1091-0 2SD2144S-UVW	2SD774-34	IRF614	2SD2578-CA	2SC2688-LK

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60**
RM-952

IC

 <p>SOP</p> <p>TOP VIEW</p> <p>Single In-line Package Pin 8~98</p>	 <p>DIP</p> <p>TOP VIEW</p> <p>Dual In-line Package Pin 6~98</p>	 <p>MARKING SIDE VIEW</p>
MM1319AFBE NJM2903M	CXP86449-630S CXA2159S M24C08-BN6 TDA7442DO13TR TDA9183T	RU-1P

					
TDA8172	S-80743AL-A7-S	SBX3081-(01)30	LA6510	NJM78M09FA	SE-135N

		<p>MARKING SIDE VIEW</p>  <p>Zig-zag In -line Package Pin 6~99</p>	
TDA805S	TA8223K	STR-F6654	TDA6107Q/N2

SECTION 6 EXPLODED VIEWS

KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/XA21M60
RM-952

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

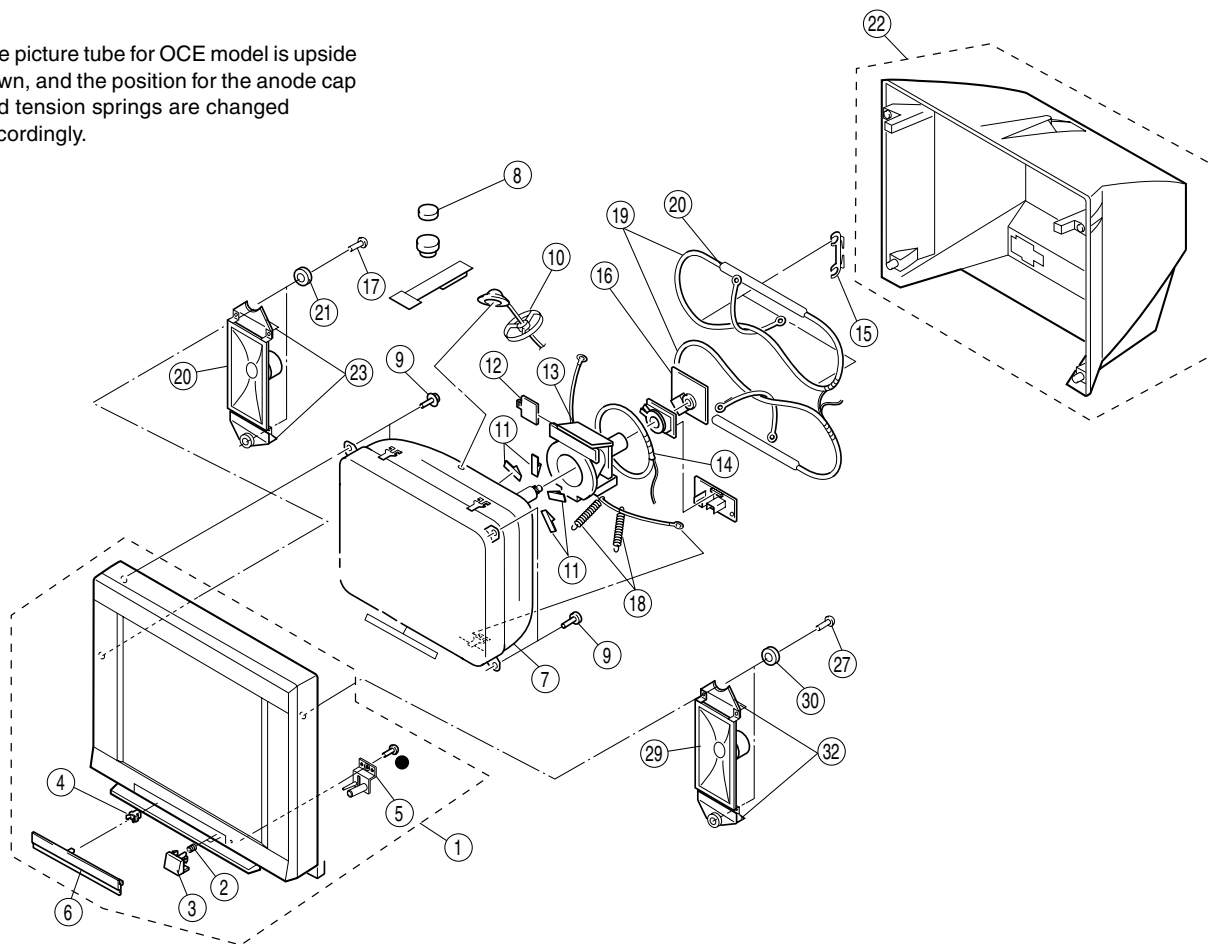
The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

6-1. PICTURE TUBE

- : 7-685-648-79 SCREW +BVTP 3 × 12
- : 7-685-663-71 SCREW +BVTP 4 × 16

NOTE:

- The picture tube for OCE model is upside down, and the position for the anode cap and tension springs are changed accordingly.

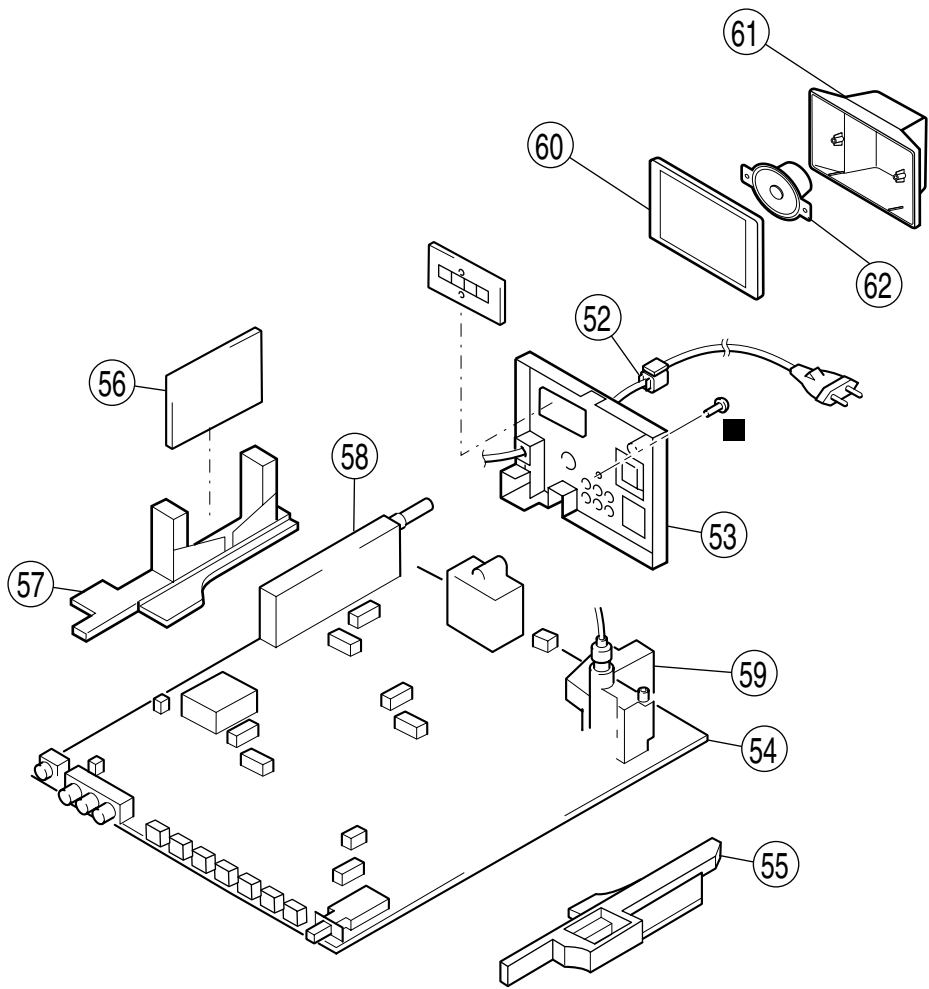


REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4038-507-1	BEZNET ASSY	2 - 6
2	4-036-405-11	SPRING, COMPRESSION	
3	4-080-400-01	BUTTON, POWER	
4	4-047-464-01	CATCHER, PUSH	
5	* 4-080-401-01	GUIDE, LIGHT	
6	4-080-399-01	DOOR, CONTROL	
7	\triangle 8-738-809-05	PICTURE TUBE (A51LPT70X) (ME/E)	
	\triangle 8-738-812-01	PICTURE TUBE (A51LPT70X) (S/GE/EM)	
8	1-452-032-00	MAGNET, DISC	
9	4-365-808-12	SCREW, TAPPING 5+ CROWN WASHER	
10	* 3-704-372-11	HOLDER, HV CABLE	
11	4-046-600-11	SPACER, DY	
12	4-057-714-01	PIECE, TLH CONVERGENCE	

REF. NO.	PART NO.	DESCRIPTION	REMARK
13	\triangle 8-451-505-11	DEFLECTION YOKE (Y21RSA-S)	
14	1-452-728-81	COIL, NA ROTATION (RT-154)	
15	4-064-883-03	HOLDER, DGC	
16	* A-1332-141-A	C1 BOARD, MOUNTED	
17	4-302-404-03	SCREW (WASHED HEAD) (+P4 X 16)	
18	4-078-765-01	SPRING, EXTENSION	
19	\triangle 1-419-479-41	COIL, DEGAUSSING (GE/E/ME)	
	\triangle 1-416-946-21	COIL, DEGAUSSING (Others)	
20	1-529-125-11	SPEAKER (13 X 7 cm)	
21	4-374-745-21	CUSHION A	
22	4-080-398-01	REAR, COVER ASSY	
23	* 4-046-981-01	BRACKET, SPEAKER	

6-2. CHASSIS

- : 7-685-648-79 SCREW +BVTP 3 × 12
- : 7-685-663-71 SCREW +BVTP 4 × 16



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
51	△ 1-757-030-11	CORD, POWER (WITH CONNECTOR)		56	* A-1241-450-A	F BOARD, MOUNTED	
52	△ 4-022-115-00	HOLDER, AC CORD		57	* 4-067-875-11	RAIL GUIDE (L)	
53	* 4-067-167-51	BRACKET TERMINAL		58	8-598-451-30	TUNER, FSS BTF-WG441	
54	* A-1299-395-A	A BOARD, COMPLETE		59	1-453-293-11	TRANSFORMER ASSY FLYBACK (NX-1748//M3A4)	
55	* 4-067-876-11	RAIL GUIDE (R)					
				60	4-080-403-01	BOX, FRONT (TWEETER)	
				61	4-080-402-01	BOX, REAR (TWEETER)	
				62	1-529-968-11	SPEAKER (5CM)	

SECTION 7 ELECTRICAL PARTS LIST

KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/XA21M60
RM-952

A

NOTE:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

• Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

• All resistors are in ohms
• F : nonflammable

CAPACITORS

• MF : μ F, PF : μ F

COILS

• MMH : mH, UH : μ H

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
	* A-1299-425-A	A BOARD COMPLETE (KV-XA21M50(MALAYSIA))		C043	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-427-A	A BOARD COMPLETE (KV-XA21M50(GE))		C044	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-434-A	A BOARD COMPLETE (KV-XA21M60(THAILAND))		C047	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-424-A	A BOARD COMPLETE (KV-XA21M61(MALAYSIA))		C048	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-441-A	A BOARD COMPLETE (KV-XA21M61(GE))		C050	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-417-A	A BOARD COMPLETE (KV-XA21M80(E))		C051	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-415-A	A BOARD COMPLETE (KV-XA21M80(ME))		C053	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
	* A-1299-418-A	A BOARD COMPLETE (KV-XA21M83(ME))		C054	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
		*****		C055	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
				C103	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
	* 4-055-304-01	HOLDER, LED		C104	1-104-665-11	ELECT 100UF	20.00% 10V
	* 4-067-182-03	HOLDER, FBT		C107	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
	4-352-844-01	PIN, LEAD, COATING		C108	1-104-664-11	ELECT 47UF	20.00% 16V
	4-382-854-11	SCREW (M3X10), P, SW (+)		C109	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
	4-382-854-21	SCREW (M3X14), P, SW (+)		C110	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		C111	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
				C112	1-104-664-11	ELECT 47UF	20.00% 16V
				C113	1-104-664-11	ELECT 47UF	20.00% 25V
				C114	1-126-967-11	ELECT 47UF	20.00% 50V
				C118	1-110-501-11	CERAMIC CHIP 0.33UF	10.00% 16V
		<CAPACITOR>		C202	1-163-023-00	CERAMIC CHIP 0.015UF	10.00% 50V
C003	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C203	1-163-023-00	CERAMIC CHIP 0.015UF	10.00% 50V
		(KV-XA21M60/M80(ME)/M83)		C204	1-130-489-00	MYLAR 0.033UF	5.00% 50V
C004	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V	C205	1-163-019-00	CERAMIC CHIP 0.0068UF	10.00% 50V
C005	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V	C206	1-163-019-00	CERAMIC CHIP 0.0068UF	10.00% 50V
C006	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V				
C007	1-104-664-11	ELECT 47UF	20.00% 16V	C207	1-130-489-00	MYLAR 0.033UF	5.00% 50V
				C208	1-126-964-11	ELECT 10UF	20.00% 50V
C008	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C209	1-126-964-11	ELECT 10UF	20.00% 50V
C010	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C210	1-126-933-11	ELECT 100UF	20.00% 16V
C012	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C211	1-126-941-11	ELECT 470UF	20.00% 25V
C013	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V				
C014	1-104-664-11	ELECT 47UF	20.00% 25V	C212	1-126-933-11	ELECT 100UF	20.00% 16V
				C213	1-126-933-11	ELECT 100UF	20.00% 16V
C015	1-163-009-11	CERAMIC CHIP 0.001UF	10.00% 50V	C214	1-126-942-61	ELECT 1000UF	20.00% 25V
C016	1-163-113-00	CERAMIC CHIP 68PF	5.00% 50V	C215	1-126-942-61	ELECT 1000UF	20.00% 25V
C017	1-163-113-00	CERAMIC CHIP 68PF	5.00% 50V	C216	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C019	1-104-664-11	ELECT 47UF	20.00% 25V				
C022	1-163-227-11	CERAMIC CHIP 10PF	0.50PF 50V	C217	1-126-964-11	ELECT 10UF	20.00% 50V
				C218	1-136-167-00	FILM 0.15UF	5.00% 50V
C023	1-163-227-11	CERAMIC CHIP 10PF	0.50PF 50V	C219	1-136-167-00	FILM 0.15UF	5.00% 50V
C024	1-163-227-11	CERAMIC CHIP 10PF	0.50PF 50V	C220	1-126-942-61	ELECT 1000UF	20.00% 25V
C026	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C221	1-126-964-11	ELECT 10UF	20.00% 50V
C027	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V				
C028	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V	C223	1-126-965-11	ELECT 22UF	20.00% 50V
				C224	1-163-133-00	CERAMIC CHIP 470PF	5.00% 50V
C030	1-126-965-11	ELECT 22UF	20.00% 50V	C225	1-109-982-11	CERAMIC CHIP 1UF	10.00% 10V
C031	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C226	1-109-982-11	CERAMIC CHIP 1UF	10.00% 10V
C032	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V	C227	1-164-346-11	CERAMIC CHIP 1UF	16V
C041	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V				
C042	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C228	1-216-077-91	RES-CHIP 15K	5% 1/10W
				C229	1-216-077-91	RES-CHIP 15K	5% 1/10W

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**



REF. NO.	PART NO.	DESCRIPTION	REMARK
C230	1-164-346-11	CERAMIC CHIP 1UF	16V
C256	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C259	1-126-933-11	ELECT 100UF	20.00% 16V
C264	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C265	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C271	1-117-720-11	CERAMIC CHIP 4.7UF	10V
C272	1-126-961-11	ELECT 2.2UF	20.00% 50V
C273	1-117-720-11	CERAMIC CHIP 4.7UF	10V
C274	1-126-961-11	ELECT 2.2UF	20.00% 50V
C275	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C276	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C277	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C278	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C279	1-163-010-11	CERAMIC CHIP 0.0012UF	10.00% 50V
C280	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C281	1-163-018-00	CERAMIC CHIP 0.0056UF	10.00% 50V
C282	1-163-018-00	CERAMIC CHIP 0.0056UF	10.00% 50V
C283	1-126-965-11	ELECT 22UF	20.00% 50V
C301	1-126-935-11	ELECT 470UF	20.00% 16V
C302	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
C303	1-126-964-11	ELECT 10UF	20.00% 50V
C304	1-126-967-11	ELECT 47UF	20.00% 50V
C305	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C306	1-163-233-11	CERAMIC CHIP 18PF	5.00% 50V
C307	1-163-233-11	CERAMIC CHIP 18PF	5.00% 50V
C308	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C309	1-137-378-11	MYLAR 0.22UF	5.00% 50V
C310	1-126-963-11	ELECT 4.7UF	20.00% 50V
C311	1-126-964-11	ELECT 10UF	20.00% 50V
C312	1-164-346-11	CERAMIC CHIP 1UF	16V
C313	1-164-346-11	CERAMIC CHIP 1UF	16V
C315	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C316	1-104-664-11	ELECT 47UF	20.00% 25V
C317	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C318	1-163-031-11	CERAMIC CHIP 0.01UF	50V
C319	1-163-031-11	CERAMIC CHIP 0.01UF	50V
C320	1-163-031-11	CERAMIC CHIP 0.01UF	50V
C322	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
C324	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C325	1-126-960-11	ELECT 1UF	20.00% 50V
C327	1-126-965-11	ELECT 22UF	20.00% 50V
C328	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C329	1-126-963-11	ELECT 4.7UF	20.00% 50V
C330	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C332	1-126-963-11	ELECT 4.7UF	20.00% 50V
C335	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C336	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C337	1-126-961-11	ELECT 2.2UF	20.00% 50V
C338	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C341	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C342	1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C347	1-126-933-11	ELECT 100UF	20.00% 16V
C348	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C349	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C350	1-216-295-11	SHORT 0	
C351	1-126-964-11	ELECT 10UF	20.00% 50V
C352	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C353	1-126-960-11	ELECT 1UF	20.00% 50V

REF. NO.	PART NO.	DESCRIPTION	REMARK
C356	1-126-962-11	ELECT 3.3UF	20.00% 50V
C357	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C401	1-164-346-11	CERAMIC CHIP 1UF	16V
C402	1-164-346-11	CERAMIC CHIP 1UF	16V
C403	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
C404	1-163-005-11	CERAMIC CHIP 470PF	10.00% 50V
C405	1-126-935-11	ELECT 470UF	20.00% 16V
C406	1-164-346-11	CERAMIC CHIP 1UF	16V
C407	1-164-346-11	CERAMIC CHIP 1UF	16V
C408	1-163-133-00	CERAMIC CHIP 470PF	5.00% 50V
C409	1-126-963-11	ELECT 4.7UF	20.00% 50V
C415	1-163-133-00	CERAMIC CHIP 470PF	5.00% 50V
C502	1-163-145-00	CERAMIC CHIP 0.0015UF	5.00% 50V
C506	1-107-638-11	ELECT 33UF	20.00% 160V
C507	1-161-830-00	CERAMIC 0.0047UF	500V
C510	1-102-112-00	CERAMIC 330PF	10.00% 50V
C512	1-163-989-11	CERAMIC CHIP 0.033UF	10.00% 25V
C513	1-163-263-11	CERAMIC CHIP 330PF	5.00% 50V
C514	1-106-383-00	MYLAR 0.047UF	10.00% 200V
C517	1-164-182-11	CERAMIC CHIP 0.0033UF	10.00% 50V
C518	1-104-665-11	ELECT 100UF	20.00% 10V
C519	1-102-212-00	CERAMIC 820PF	10.00% 500V
C521	1-126-934-11	ELECT 220UF	20.00% 16V
C522	1-126-933-11	ELECT 100UF	20.00% 16V
C523	1-102-002-00	CERAMIC 680PF	10.00% 500V
C524	1-126-967-11	ELECT 47UF	20.00% 50V
C526	1-130-495-00	MYLAR 0.1UF	5.00% 50V
C527	1-102-820-00	CERAMIC 330PF	5.00% 50V
C528	1-162-134-11	CERAMIC 470PF	10.00% 2KV
C530	1-137-372-11	MYLAR 0.022UF	5.00% 50V
C531	1-126-961-11	ELECT 2.2UF	20.00% 50V
C532	1-126-941-11	ELECT 470UF	20.00% 25V
C533	1-126-941-11	ELECT 470UF	20.00% 25V
C534	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C536	1-130-495-00	MYLAR 0.1UF	5.00% 50V
C537	1-126-969-11	ELECT 220UF	20.00% 50V
C538	1-117-657-21	FILM 8500PF	3.00% 1.2KV
C539	1-129-746-91	FILM 0.039UF	5.00% 400V
C540	1-136-171-00	FILM 0.33UF	5.00% 50V
C546	1-165-319-11	CERAMIC CHIP 0.1UF	50V
C549	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C550	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C551	1-126-960-11	ELECT 1UF	20.00% 50V
C552	1-162-116-00	CERAMIC 680PF	10.00% 2KV
C553	1-162-116-00	CERAMIC 680PF	10.00% 2KV
C554	1-137-417-11	MYLAR 0.0047UF	10.00% 200V
C556	1-126-941-11	ELECT 470UF	20.00% 25V
C557	1-126-941-11	ELECT 470UF	20.00% 25V
C558	1-123-024-21	ELECT 33UF	160V
C560	1-102-228-00	CERAMIC 470PF	10.00% 500V
C561	1-129-708-91	FILM 0.0033UF	5.00% 630V
C562	1-102-228-00	CERAMIC 470PF	10.00% 500V
C564	1-163-038-11	CERAMIC CHIP 0.1UF	25V
C565	1-107-655-11	ELECT 47UF	20.00% 250V
C566	1-102-244-00	CERAMIC 220PF	10.00% 500V
C567	1-115-521-11	FILM 0.82UF	5.00% 250V
C568	1-102-228-00	CERAMIC 470PF	10.00% 500V
C570	1-115-520-11	FILM 0.68UF	5.00% 250V

The components identified by shading
and mark Δ are critical for safety.
Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C573	1-106-375-12	MYLAR	0.022UF 99% 200V	C653	1-104-664-11	ELECT	47UF 20.00% 25V
C574	1-107-636-11	ELECT	10UF 20.00% 160V	C657	1-101-821-00	CERAMIC	0.0022UF 500V
C576	1-130-495-00	MYLAR	0.1UF 5.00% 50V	C658	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V
C577	1-106-395-00	MYLAR	0.15UF 10.00% 200V	C901	1-136-153-00	FILM	0.01UF 5.00% 50V
C582	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V	C902	1-136-153-00	FILM	0.01UF 5.00% 50V
C586	1-216-295-11	SHORT	0	C905	1-126-963-11	ELECT	4.7UF 20.00% 50V
C600 Δ	1-104-705-11	MYLAR	0.1UF 20.00% 250V	C906	1-164-346-11	CERAMIC CHIP	1UF 16V
C602 Δ	1-104-705-11	MYLAR	0.1UF 20.00% 250V	C907	1-163-133-00	CERAMIC CHIP	470PF 5.00% 50V
C604	1-163-009-11	CERAMIC CHIP	0.001UF 10.00% 50V	C908	1-163-133-00	CERAMIC CHIP	470PF 5.00% 50V
C605 Δ	1-127-942-51	CERAMIC	330PF 10% 250V	C909	1-164-346-11	CERAMIC CHIP	1UF 16V
C606 Δ	1-127-942-51	CERAMIC	330PF 10% 250V	C910	1-126-967-11	ELECT	47UF 20.00% 50V
C607	1-161-830-00	CERAMIC	0.0047UF 99% 500V	C911	1-126-967-11	ELECT	47UF 20.00% 50V
C608	1-161-830-00	CERAMIC	0.0047UF 99% 500V	C912	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V
C609	1-126-968-11	ELECT	100UF 20.00% 50V (Except KV-XA21M50(Malaysia)/M60/ M61(Malaysia))	C913	1-104-665-11	ELECT	100UF 20.00% 10V
C610	1-126-964-11	ELECT	10UF 20.00% 50V	C914	1-163-133-00	CERAMIC CHIP	470PF 5.00% 50V
C611	1-161-830-00	CERAMIC	0.0047UF 99% 500V			<CONNECTOR>	
C612	1-161-830-00	CERAMIC	0.0047UF 99% 500V	CN104	1-695-915-11	TAB (CONTACT)	
C613	1-117-802-11	ELECT	180UF 20.00% 450V (KV-XA21M50(Malaysia)/M60/M61(Malaysia))	CN202 *	1-785-608-11	PIN, CONNECTOR 4P	
C613	1-117-752-11	ELECT(BLOCK)	330UF 20.00% 450V (Except KV-XA21M50(Malaysia)/ M60/M61(Malaysia))	CN203 *	1-564-506-11	PLUG, CONNECTOR 3P	
C614	1-126-964-11	ELECT	10UF 20.00% 50V (Except KV-XA21M50(Malaysia)/ M60/M61(Malaysia))	CN204 *	1-564-506-11	PLUG, CONNECTOR 3P	
C616	1-130-202-00	FILM	0.022UF 5.00% 400V	CN301 *	1-774-813-11	CONNECTOR, BOARD TO BOARD 7P (KV-XA21M61)	
C617	1-107-792-11	CERAMIC	100PF 5.00% 1KV	CN305 *	1-564-509-11	PLUG, CONNECTOR 6P	
C618	1-125-893-11	FILM	680PF 3.00% 1.5KV	CN306 *	1-564-510-11	PLUG, CONNECTOR 7P	
C619 Δ	1-119-886-51	CERAMIC	470PF 10.00% 250V	CN307 *	1-774-813-11	CONNECTOR, BOARD TO BOARD 7P (KV-XA21M61)	
C620	1-163-133-00	CERAMIC CHIP	470PF 5.00% 50V	CN505	1-564-507-11	PLUG, CONNECTOR 4P	
C621	1-102-114-00	CERAMIC	470PF 10.00% 50V	CN507 *	1-564-507-11	PLUG, CONNECTOR 4P (Except KV-XA21M60)	
C622	1-102-074-00	CERAMIC	0.001UF 10.00% 50V	CN601	1-580-843-11	PIN, CONNECTOR (POWER)	
C623	1-104-665-11	ELECT	100UF 20.00% 25V	CN602 *	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P (Except KV-XA21M60)	
C624	1-104-331-11	CERAMIC	0.0022UF 10.00% 1KV	CN604 *	1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P (KV-XA21M50(Malaysia)/M61(Malaysia))	
C627	1-102-002-00	CERAMIC	680PF 10.00% 500V	CN604 *	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P (Except KV-XA21M50(ME)/M61(Malaysia))	
C628	1-126-942-61	ELECT	1000UF 20.00% 25V	CN609 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P	
C629	1-126-964-11	ELECT	10UF 20.00% 50V	CN901 *	1-564-507-11	PLUG, CONNECTOR 4P	
C630	1-123-024-21	ELECT	33UF 160V			<DIODE>	
C633	1-104-999-11	MYLAR	0.1UF 10.00% 200V	D001	8-719-988-61	1SS355TE-17	
C634	1-126-933-11	ELECT	100UF 20.00% 16V	D005	8-719-988-61	1SS355TE-17	
C635	1-104-665-11	ELECT	100UF 20.00% 10V	D006	8-719-988-61	1SS355TE-17	
C636	1-104-760-11	CERAMIC CHIP	0.047UF 10.00% 50V	D010	8-719-070-16	NNCD9.1A-T1 (Except KV-XA21M60)	
C639	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V	D011	8-719-070-16	NNCD9.1A-T1 (Except KV-XA21M60)	
C640	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V	D100	8-719-988-61	1SS355TE-17 (KV-XA21M61)	
C641	1-102-002-00	CERAMIC	680PF 10.00% 500V	D100	8-719-073-01	MA111-(K8).S0 (KV-XA21M60 Only)	
C642	1-107-890-11	ELECT	2200UF 20.00% 25V	D203	8-719-820-41	1SS302 (Except KV-XA21M60)	
C643	1-104-665-11	ELECT	100UF 20.00% 10V	D203	8-719-914-42	DA204K (KV-XA21M60 Only)	
C644	1-104-331-11	CERAMIC	0.0022UF 10.00% 1KV	D300	1-216-295-11	SHORT	0
C645	1-137-605-11	MYLAR	0.01UF 10.00% 250V	D301	8-719-988-61	1SS355TE-17	
C646	1-107-679-91	ELECT	10UF 20.00% 450V	D306	8-719-988-61	1SS355TE-17	
C647	1-163-275-11	CERAMIC CHIP	0.001UF 5.00% 50V	D307	8-719-988-61	1SS355TE-17	
C649	1-126-940-11	ELECT	330UF 20.00% 25V	D308	8-719-988-61	1SS355TE-17	
C650	1-163-275-11	CERAMIC CHIP	0.001UF 5.00% 50V	D309	8-719-159-10	RD5.1SB-T2 (Except KV-XA21M60)	
C651	1-163-133-00	CERAMIC CHIP	470PF 5.00% 50V				
C652	1-126-965-11	ELECT	22UF 20.00% 50V				

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D309	8-719-069-54	UDZS-TE17-5.1B (KV-XA21M60 Only)		D608	8-719-110-53	RD20ES-B2	
D311	8-719-988-61	ISS355TE-17		D609	8-719-311-31	RU-1P	
D312	8-719-988-61	ISS355TE-17		D610	8-719-210-21	11EQS04 (Except KV-XA21M60)	
D313	8-719-988-61	ISS355TE-17		D610	8-719-043-76	AK04V0 (KV-XA21M60 Only)	
D314	8-719-988-61	ISS355TE-17		D611	8-719-046-74	AU-01Z-V1 (Except KV-XA21M60)	
D315	8-719-988-61	ISS355TE-17		D611	8-719-075-73	10ELS2N-TB5 (KV-XA21M60 Only)	
D316	8-719-037-02	RD6.8SB-T1 (Except KV-XA21M60)		D613	8-719-046-74	AU-01Z-V1 (Except KV-XA21M60)	
D316	8-719-978-33	DTZ-TT11-6.8B (KV-XA21M60 Only)		D613	8-719-075-73	10ELS2N-TB5 (KV-XA21M60 Only)	
D320	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D614	8-719-046-74	AU-01Z-V1 (Except KV-XA21M60)	
D320	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D614	8-719-075-73	10ELS2N-TB5 (KV-XA21M60 Only)	
D321	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D615	8-719-312-10	RU4AM-T3	
D321	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D618	8-719-067-18	RN4Z	
D401	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D620	8-719-110-72	RD30ESB2	
D401	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D623	8-719-978-65	DTZ-TT11-15B	
D402	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D624	8-719-073-01	MA111-(K8).S0	
D402	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D625	8-719-977-28	DTZ10B	
D403	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D627	8-719-073-84	31DQ06-FC5	
D403	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D628	8-719-911-19	ISS119-25	
D404	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D631	8-719-068-00	ERC04-06SE	
D404	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D632	8-719-068-00	ERC04-06SE	
D405	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D633	8-719-948-45	ERA22-08	
D405	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D634	8-719-073-01	MA111-(K8).S0	
D406	8-719-158-35	RD9.1S-B (Except KV-XA21M60)		D635	8-719-073-01	MA111-(K8).S0	
D406	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)		D636	8-719-510-02	D1NS4	
D504	8-719-302-43	EL1Z (Except KV-XA21M60)		D637	8-719-109-96	RD6.8ES-B1	
D504	8-719-302-06	EU2A (KV-XA21M60 Only)		D638	8-719-200-82	11ES2 (Except KV-XA21M60)	
D505	8-719-988-61	ISS355TE-17		D638	8-719-024-99	11ES2-NTA2B (KV-XA21M60 Only)	
D506	8-719-911-19	ISS119-25		D901	8-719-158-35	RD9.1S-B (Except KV-XA21M60)	
D507	8-719-988-61	ISS355TE-17		D901	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)	
D508	8-719-988-61	ISS355TE-17		D902	8-719-158-35	RD9.1S-B (Except KV-XA21M60)	
D509	1-216-073-00	RES-CHIP	10K 5% 1/10W	D902	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)	
D510	8-719-988-61	ISS355TE-17		D903	8-719-158-35	RD9.1S-B (Except KV-XA21M60)	
D511	8-719-988-61	ISS355TE-17		D903	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)	
D512	8-719-988-61	ISS355TE-17		D904	8-719-158-35	RD9.1S-B (Except KV-XA21M60)	
D513	8-719-908-03	GP08D		D904	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)	
D517	8-719-312-71	RS3FS (Except KV-XA21M60)		D905	8-719-158-35	RD9.1S-B (Except KV-XA21M60)	
D517	8-719-945-80	ERC06-15S (KV-XA21M60 Only)		D905	8-719-069-60	UDZS-TE17-9.1B (KV-XA21M60 Only)	
D518	8-719-900-26	ERD29-08J		D906	8-719-083-18	SPB-26MVWF	
D521	8-719-302-43	EL1Z (Except KV-XA21M60)				<CONNECTOR>	
D521	8-719-302-06	EU2A (KV-XA21M60 Only)		DY1	* 1-580-798-11	CONNECTOR PIN (DY) 6P	
D522	8-719-302-43	EL1Z (Except KV-XA21M60)				<FERRITE BEAD>	
D522	8-719-302-06	EU2A (KV-XA21M60 Only)		FB300	1-412-911-31	FERRITE	0UH
D523	8-719-302-43	EL1Z (Except KV-XA21M60)		FB501	1-410-397-21	FERRITE	1.1UH
D523	8-719-302-06	EU2A (KV-XA21M60 Only)		FB502	1-410-397-21	FERRITE	1.1UH
D527	8-719-908-03	GP08D		FB600	1-410-397-21	FERRITE	1.1UH
D528	8-719-908-03	GP08D		FB601	1-410-397-21	FERRITE	1.1UH
D531	8-719-988-61	ISS355TE-17		FB602	1-410-397-21	FERRITE	1.1UH
D532	8-719-988-61	ISS355TE-17		FB603	1-410-397-21	FERRITE	1.1UH
D534	1-216-295-11	SHORT	0	FB604	1-412-911-31	FERRITE	0UH
D602	8-719-911-19	ISS119-25		FB607	1-410-397-21	FERRITE	1.1UH
D603	8-719-150-92	RD33EB3T (Except KV-XA21M50(Malaysia)/M60/M61(Malaysia))		FB608	1-412-911-31	FERRITE	0UH
D604	8-719-028-72	RGPO2-17EL-6433 (Except KV-XA21M50(Malaysia)/M60/M61(Malaysia))		FB611	1-410-397-21	FERRITE	1.1UH
D605	8-719-510-22	D3SB60		FB613	1-410-397-21	FERRITE	1.1UH
D606	8-719-108-18	5P-6M		FB615	1-410-397-21	FERRITE	1.1UH
D607	8-719-073-01	MA111-(K8).S0 (Except KV-XA21M50(Malaysia)/M60/M61(Malaysia))					

The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<IC>	
IC001	8-752-917-82	CXP86449-630S (Except KV-XA21M60/M83)	
IC001	8-752-917-84	CXP86449-632S (KV-XA21M60 Only)	
IC001	8-752-917-83	CXP86449-631S (KV-XA21M83 Only)	
IC002	8-759-371-21	MM1319AFBE	
IC003	8-759-672-78	M24C08-BN6(A)	
IC100	8-759-042-02	S-80743AL-A7-S (KV-XA21M60/M61)	
IC201	8-759-336-30	TA8223K	
IC203	8-759-827-61	TDA7442D013TR	
IC301	8-752-095-72	CXA2159S	
IC302	8-759-672-27	TDA9183T	
IC502	8-759-700-07	NJM2903M	
IC503	8-759-980-58	TDA8172	
IC601	8-749-013-75	STR-F6654	
IC602	8-749-920-61	SE-135N	
IC603	8-759-701-59	NJM78M09FA	
IC604	8-759-231-53	TA7805S	
IC901	8-742-014-21	SBX1981-51(21) (Except KV-XA21M60)	
IC901	8-759-180-30	UPD6124G-212 (KV-XA21M60 Only)	
		<JACK>	
J401	1-779-850-11	JACK BLOCK, PIN 6P	
J901	1-770-786-11	JACK	
J902	1-770-329-11	JACK, PIN 3P	
		<CHIP CONDUCTOR>	
JR001	1-216-295-11	SHORT	0
JR002	1-216-295-11	SHORT	0
JR003	1-216-295-11	SHORT	0
JR004	1-216-295-11	SHORT	0
JR006	1-216-295-11	SHORT	0
JR007	1-216-295-11	SHORT	0
JR008	1-216-295-11	SHORT	0 (KV-XA21M60/M61)
JR009	1-216-295-11	SHORT	0
JR010	1-216-295-11	SHORT	0
JR011	1-216-295-11	SHORT	0
JR012	1-216-295-11	SHORT	0
JR014	1-216-295-11	SHORT	0
JR015	1-216-295-11	SHORT	0
JR016	1-216-295-11	SHORT	0
JR019	1-216-295-11	SHORT	0
JR020	1-216-295-11	SHORT	0
JR022	1-216-295-11	SHORT	0
JR023	1-216-295-11	SHORT	0
JR024	1-216-295-11	SHORT	0
JR025	1-216-295-11	SHORT	0
JR028	1-216-295-11	SHORT	0
JR102	1-216-295-11	SHORT	0
JR107	1-216-295-11	SHORT	0 (KV-XA21M60/M61)
JR009	1-216-295-11	SHORT	0
JR109	1-216-295-11	SHORT	0 (Except KV-XA21M60/M61)
JR112	1-216-295-11	SHORT	0
JR202	1-216-295-11	SHORT	0
JR204	1-216-295-11	SHORT	0
JR213	1-216-295-11	SHORT	0
JR214	1-216-295-11	SHORT	0

REF. NO.	PART NO.	DESCRIPTION	REMARK
JR300	1-216-295-11	SHORT	0
JR304	1-216-295-11	SHORT	0
JR308	1-216-295-11	SHORT	0
JR309	1-216-295-11	SHORT	0
JR310	1-216-295-11	SHORT	0
JR311	1-216-295-11	SHORT	0
JR312	1-216-295-11	SHORT	0
JR400	1-216-295-11	SHORT	0
JR401	1-216-295-11	SHORT	0
JR403	1-216-295-11	SHORT	0
JR404	1-216-295-11	SHORT	0
JR405	1-216-295-11	SHORT	0
JR500	1-216-295-11	SHORT	0
JR501	1-216-295-11	SHORT	0
JR503	1-216-295-11	SHORT	0
JR505	1-216-295-11	SHORT	0
JR600	1-216-295-11	SHORT	0
		<COIL>	
L002	1-414-856-11	INDUCTOR	10UH
L003	1-414-180-11	INDUCTOR	3.3UH
L005	1-414-233-22	FERRITE	0UH
L101	1-414-856-11	INDUCTOR	10UH
L102	1-414-856-11	INDUCTOR	10UH
L103	1-414-856-11	INDUCTOR	10UH
L104	1-414-856-11	INDUCTOR	10UH
L105	1-414-856-11	INDUCTOR	10UH
L204	1-414-856-11	INDUCTOR	10UH
L301	1-414-189-31	INDUCTOR	100UH
L302	1-414-185-41	INDUCTOR	22UH
L303	1-414-189-31	INDUCTOR	100UH
L304	1-414-189-31	INDUCTOR	100UH
L501	1-412-525-31	INDUCTOR	10UH
L502	1-422-613-11	COIL, AIR CORE	
L503	1-412-525-31	INDUCTOR	10UH
L504	1-412-525-31	INDUCTOR	10UH
L505	1-412-525-31	INDUCTOR	10UH
L506	1-412-525-31	INDUCTOR	10UH
L507	1-459-111-00	INDUCTOR	10MH
L509	1-459-390-00	INDUCTOR	390UH
L510	1-416-972-11	COIL, HORIZONTAL LINEARITY	
L513	1-412-551-31	INDUCTOR	1.5MH
L515	1-459-104-00	COIL, WITH CORE	
L518	1-414-187-11	INDUCTOR	47UH
L601	1-412-527-11	INDUCTOR	15UH
L901	1-408-603-31	INDUCTOR	10UH
L902	1-408-603-31	INDUCTOR	10UH
L905	1-414-856-11	INDUCTOR	10UH
		<PHOTO COUPLER>	
PH600 \triangle	8-749-924-35	ON3171-R	
		<IC LINK>	
PS200	1-532-675-21	LINK, IC 1.5A/150V	

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**



REF. NO.	PART NO.	DESCRIPTION	REMARK
<TRANSISTOR>			
Q002	8-729-230-49	2SC2712-YG (Except KV-XA21M61(Malaysia))	
Q002	8-729-120-28	2SC1623-L5L6 (KV-XA21M61(Malaysia) Only)	
Q101	8-729-230-49	2SC2712-YG (Except KV-XA21M61(Malaysia))	
Q101	8-729-120-28	2SC1623-L5L6 (KV-XA21M61(Malaysia) Only)	
Q201	8-729-424-67	UN2216	
Q202	8-729-424-67	UN2216	
Q205	8-729-421-19	UN2213 (Except KV-XA21M60)	
Q205	1-801-806-11	TR DTC144EKA (KV-XA21M60 Only)	
Q206	8-729-421-19	UN2213 (Except KV-XA21M60)	
Q206	1-801-806-11	TR DTC144EKA (KV-XA21M60 Only)	
Q207	8-729-421-19	UN2213 (Except KV-XA21M60)	
Q207	1-801-806-11	TR DTC144EKA (KV-XA21M60 Only)	
Q301	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q301	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q302	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q302	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q303	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q303	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q305	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q305	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q306	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q306	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q307	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q307	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q308	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q308	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q312	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q312	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q313	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q313	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q314	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q314	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q315	8-729-421-19	UN2213 (Except KV-XA21M60)	
Q315	1-801-806-11	TR DTC144EKA (KV-XA21M60 Only)	
Q316	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q316	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q317	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q317	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q401	8-729-424-67	UN2216	
Q402	8-729-424-67	UN2216	
Q403	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q403	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q404	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q404	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q503	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q503	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q505	8-729-931-45	IRF614	
Q506	8-729-140-96	2SD774-34	
Q507	8-729-216-22	2SA1162-G (Except KV-XA21M60)	
Q507	8-729-026-49	2SA1037AK-T146-R (KV-XA21M60 Only)	
Q509	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q509	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q511	8-729-048-07	2SD2578-CA	
Q601	8-729-023-22	2SD2114K	
Q602	8-729-230-49	2SC2712-YG (Except KV-XA21M50(Malaysia)/M60/M61(Malaysia))	

REF. NO.	PART NO.	DESCRIPTION	REMARK
Q603	8-729-027-23	DTA114EKA-T146 (Except KV-XA21M50(Malaysia)/M60/M61(Malaysia))	
Q604	8-729-200-17	2SA1091-O	
Q605	8-729-044-30	2SK2845-LB102	
Q606	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q606	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q607	8-729-922-37	2SD2144S-UVW	
Q608	8-729-230-49	2SC2712-YG (Except KV-XA21M60)	
Q608	8-729-120-28	2SC1623-L5L6 (KV-XA21M60 Only)	
Q901	8-729-421-19	UN2213 (Except KV-XA21M60)	
Q901	1-801-806-11	TR DTC144EKA (KV-XA21M60 Only)	
Q902	1-801-806-11	TR DTC144EKA (KV-XA21M60 Only)	
Q902	8-729-421-19	UN2213 (Except KV-XA21M60)	
<RESISTOR>			
R001	1-414-233-22	FERRITE	0UH
R002	1-216-025-11	RES-CHIP	100 5% 1/10W
R003	1-216-073-00	RES-CHIP	10K 5% 1/10W
		(Except KV-XA21M60/M80(ME)/M83)	
R003	1-216-295-11	SHORT	0 (KV-XA21M60/M80(ME)/M83)
R004	1-216-025-11	RES-CHIP	100 5% 1/10W
R005	1-216-025-11	RES-CHIP	100 5% 1/10W
R007	1-216-295-11	SHORT	0
R008	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R010	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R011	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R012	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R013	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R014	1-216-025-11	RES-CHIP	100 5% 1/10W
R015	1-216-025-11	RES-CHIP	100 5% 1/10W
R017	1-216-049-11	RES-CHIP	1K 5% 1/10W
R018	1-216-033-00	RES-CHIP	220 5% 1/10W
R019	1-216-073-00	RES-CHIP	10K 5% 1/10W
R020	1-216-045-00	RES-CHIP	680 5% 1/10W
R021	1-216-073-00	RES-CHIP	10K 5% 1/10W
R022	1-216-295-11	SHORT	0
R024	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
R025	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
R026	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
R027	1-216-073-00	RES-CHIP	10K 5% 1/10W
R028	1-216-073-00	RES-CHIP	10K 5% 1/10W
		(KV-XA21M60/M61 Only)	
R029	1-216-049-11	RES-CHIP	1K 5% 1/10W
R031	1-216-049-11	RES-CHIP	1K 5% 1/10W
R035	1-216-025-11	RES-CHIP	100 5% 1/10W
R036	1-216-025-11	RES-CHIP	100 5% 1/10W
R037	1-216-025-11	RES-CHIP	100 5% 1/10W
R040	1-216-025-11	RES-CHIP	100 5% 1/10W
R041	1-216-025-11	RES-CHIP	100 5% 1/10W
R042	1-216-295-11	SHORT	0
R043	1-216-049-11	RES-CHIP	1K 5% 1/10W
R044	1-216-025-11	RES-CHIP	100 5% 1/10W
R045	1-414-233-22	FERRITE	0UH
R046	1-216-049-11	RES-CHIP	1K 5% 1/10W
R047	1-414-233-22	FERRITE	0UH
R048	1-216-073-00	RES-CHIP	10K 5% 1/10W
R050	1-216-073-00	RES-CHIP	10K 5% 1/10W



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R053	1-216-049-11	RES-CHIP	1K 5% 1/10W	R312	1-216-039-00	RES-CHIP	390 5% 1/10W
R058	1-216-295-11	SHORT	0	R313	1-216-037-00	RES-CHIP	330 5% 1/10W
R059	1-216-295-11	SHORT	0	R314	1-216-083-00	RES-CHIP	27K 5% 1/10W
R060	1-216-295-11	SHORT	0	R316	1-216-037-00	RES-CHIP	330 5% 1/10W
R061	1-216-033-00	RES-CHIP	220 5% 1/10W	R317	1-216-091-00	RES-CHIP	56K 5% 1/10W
R062	1-216-041-00	RES-CHIP	470 5% 1/10W	R318	1-216-039-00	RES-CHIP	390 5% 1/10W
R063	1-216-037-00	RES-CHIP	330 5% 1/10W	R319	1-216-025-11	RES-CHIP	100 5% 1/10W
R064	1-216-037-00	RES-CHIP	330 5% 1/10W	R320	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R065	1-216-037-00	RES-CHIP	330 5% 1/10W	R321	1-216-073-00	RES-CHIP	10K 5% 1/10W
R066	1-216-049-11	RES-CHIP	1K 5% 1/10W	R322	1-216-033-00	RES-CHIP	220 5% 1/10W
R067	1-216-049-11	RES-CHIP	1K 5% 1/10W	R323	1-216-053-00	RES-CHIP	1.5K 5% 1/10W
R068	1-216-041-00	RES-CHIP	470 5% 1/10W	R324	1-216-053-00	RES-CHIP	1.5K 5% 1/10W
R101	1-216-025-11	RES-CHIP	100 5% 1/10W	R325	1-216-041-00	RES-CHIP	470 5% 1/10W
		(KV-XA21M60/XA21M61 Only)		R331	1-216-295-11	SHORT	0
R102	1-216-025-11	RES-CHIP	100 5% 1/10W	R332	1-216-033-00	RES-CHIP	220 5% 1/10W
		(KV-XA21M60/XA21M61 Only)		R333	1-216-073-00	RES-CHIP	10K 5% 1/10W
R105	1-216-295-11	SHORT	0	R334	1-216-127-11	RES-CHIP	1.8M 5% 1/10W
R109	1-216-041-00	RES-CHIP	470 5% 1/10W	R335	1-216-045-00	RES-CHIP	680 5% 1/10W
R111	1-216-025-11	RES-CHIP	100 5% 1/10W	R338	1-216-033-00	RES-CHIP	220 5% 1/10W
R112	1-216-025-11	RES-CHIP	100 5% 1/10W	R340	1-216-025-11	RES-CHIP	100 5% 1/10W
R113	1-216-047-91	RES-CHIP	820 5% 1/10W	R345	1-216-081-00	RES-CHIP	22K 5% 1/10W
R202	1-216-053-00	RES-CHIP	1.5K 5% 1/10W	R348	1-208-806-11	METAL CHIP	10K 0.5% 1/10W
R203	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R349	1-216-073-00	RES-CHIP	10K 5% 1/10W
R204	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R350	1-216-061-00	RES-CHIP	3.3K 5% 1/10W
R205	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R351	1-216-053-00	RES-CHIP	1.5K 5% 1/10W
R206	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R354	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
R207	1-216-053-00	RES-CHIP	1.5K 5% 1/10W	R355	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
R208	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R356	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
R209	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R357	1-216-079-00	RES-CHIP	18K 5% 1/10W
R210	1-216-029-00	RES-CHIP	150 5% 1/10W	R358	1-216-049-11	RES-CHIP	1K 5% 1/10W
R212	1-216-029-00	RES-CHIP	150 5% 1/10W	R359	1-216-033-00	RES-CHIP	220 5% 1/10W
R225	1-216-033-00	RES-CHIP	220 5% 1/10W	R360	1-216-033-00	RES-CHIP	220 5% 1/10W
R226	1-216-033-00	RES-CHIP	220 5% 1/10W	R361	1-216-073-00	RES-CHIP	10K 5% 1/10W
R227	1-216-033-00	RES-CHIP	220 5% 1/10W	R362	1-216-075-00	RES-CHIP	12K 5% 1/10W
R228	1-249-389-11	CARBON	4.7 5% 1/4W	R363	1-216-079-00	RES-CHIP	18K 5% 1/10W
R229	1-216-073-00	RES-CHIP	10K 5% 1/10W	R364	1-216-295-11	SHORT	0
R230	1-216-073-00	RES-CHIP	10K 5% 1/10W	R365	1-216-033-00	RES-CHIP	220 5% 1/10W
		(KV-XA21M60/M61 Only)		R366	1-216-073-00	RES-CHIP	10K 5% 1/10W
R230	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R367	1-216-073-00	RES-CHIP	10K 5% 1/10W
		(Except KV-XA21M60/M61)		R370	1-216-033-00	RES-CHIP	220 5% 1/10W
R231	1-216-295-11	SHORT	0	R371	1-216-083-00	RES-CHIP	27K 5% 1/10W
R234	1-249-389-11	CARBON	4.7 5% 1/4W	R372	1-216-091-00	RES-CHIP	56K 5% 1/10W
R237	1-216-308-00	RES-CHIP	4.7 5% 1/10W	R375	1-216-025-11	RES-CHIP	100 5% 1/10W
R238	1-216-069-00	RES-CHIP	6.8K 5% 1/10W			(KV-XA21M60/M61 Only)	
R239	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	R376	1-216-081-00	RES-CHIP	22K 5% 1/10W
R242	1-216-025-11	RES-CHIP	100 5% 1/10W	R377	1-216-121-11	RES-CHIP	1M 5% 1/10W
R243	1-216-025-11	RES-CHIP	100 5% 1/10W	R378	1-216-053-00	RES-CHIP	1.5K 5% 1/10W
R246	1-216-067-00	RES-CHIP	5.6K 5% 1/10W	R379	1-218-179-11	RES-CHIP	10M 5% 1/10W
R247	1-216-067-00	RES-CHIP	5.6K 5% 1/10W	R380	1-216-041-00	RES-CHIP	470 5% 1/10W
R301	1-216-073-00	RES-CHIP	10K 5% 1/10W	R383	1-216-049-11	RES-CHIP	1K 5% 1/10W
R302	1-216-295-11	SHORT	0	R384	1-216-295-11	SHORT	0
R303	1-216-049-11	RES-CHIP	1K 5% 1/10W	R385	1-216-033-00	RES-CHIP	220 5% 1/10W
R304	1-216-073-00	RES-CHIP	10K 5% 1/10W	R391	1-216-049-11	RES-CHIP	1K 5% 1/10W
R305	1-216-049-11	RES-CHIP	1K 5% 1/10W	R401	1-216-049-11	RES-CHIP	1K 5% 1/10W
R306	1-216-077-91	RES-CHIP	15K 5% 1/10W	R402	1-216-073-00	RES-CHIP	10K 5% 1/10W
R308	1-216-025-11	RES-CHIP	100 5% 1/10W	R403	1-216-073-00	RES-CHIP	10K 5% 1/10W
R309	1-216-025-11	RES-CHIP	100 5% 1/10W	R404	1-216-073-00	RES-CHIP	10K 5% 1/10W
R310	1-216-025-11	RES-CHIP	100 5% 1/10W	R405	1-216-049-11	RES-CHIP	1K 5% 1/10W
R311	1-216-041-00	RES-CHIP	470 5% 1/10W				

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**

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REF. NO.	PART NO.	DESCRIPTION	REMARK
R406	1-216-073-00	RES-CHIP 10K	5% 1/10W
R407	1-216-049-11	RES-CHIP 1K	5% 1/10W
R408	1-216-049-11	RES-CHIP 1K	5% 1/10W
R409	1-216-041-00	RES-CHIP 470	5% 1/10W
R410	1-216-113-00	RES-CHIP 470K	5% 1/10W
R411	1-216-113-00	RES-CHIP 470K	5% 1/10W
R412	1-216-041-00	RES-CHIP 470	5% 1/10W
R413	1-216-021-00	RES-CHIP 68	5% 1/10W
R414	1-216-113-00	RES-CHIP 470K	5% 1/10W
R415	1-216-113-00	RES-CHIP 470K	5% 1/10W
R416	1-216-077-91	RES-CHIP 15K	5% 1/10W
R417	1-216-077-91	RES-CHIP 15K	5% 1/10W
R418	1-216-113-00	RES-CHIP 470K	5% 1/10W
R419	1-216-022-00	RES-CHIP 75	5% 1/10W
R426	1-216-033-00	RES-CHIP 220	5% 1/10W
R505	1-216-099-00	RES-CHIP 120K	5% 1/10W
R506	1-216-085-00	RES-CHIP 33K	5% 1/10W
R507	1-249-389-11	CARBON 4.7	5% 1/4W
R508	1-215-910-00	METAL OXIDE 68	5% 3W
R509	1-215-911-11	METAL OXIDE 100	5% 3W
R510	1-215-885-00	METAL OXIDE 68	5% 2W
R511	1-215-911-11	METAL OXIDE 100	5% 3W
R516	1-216-081-00	RES-CHIP 22K	5% 1/10W
R518	1-247-807-31	CARBON 100	5% 1/4W
R520	1-215-445-00	METAL 10K	1% 1/4W
R522	1-208-806-11	METAL CHIP 10K	0.5% 1/10W
R523	1-249-411-11	CARBON 330	5% 1/4W
R525	1-208-830-11	METAL CHIP 100K	0.5% 1/10W
R526	1-208-798-11	METAL CHIP 4.7K	0.5% 1/10W
R527	1-216-001-00	RES-CHIP 10	5% 1/10W
R528	1-208-814-91	METAL CHIP 22K	0.5% 1/10W
R529	1-216-635-11	METAL CHIP 220	0.5% 1/10W
R531	1-247-843-11	CARBON 3.3K	5% 1/4W
R533	1-249-417-11	CARBON 1K	5% 1/4W
R534	1-216-361-00	METAL OXIDE 0.22	5% 2W
R535	1-216-067-00	RES-CHIP 5.6K	5% 1/10W
R536	1-216-067-00	RES-CHIP 5.6K	5% 1/10W
R537	1-208-814-91	METAL CHIP 22K	0.5% 1/10W
R540	1-216-065-91	RES-CHIP 4.7K	5% 1/10W
R541	1-216-065-91	RES-CHIP 4.7K	5% 1/10W
R542	1-216-295-11	SHORT 0	
R543	1-216-437-00	METAL OXIDE 5.6K	5% 1W
R544	1-215-894-11	METAL OXIDE 2.2K	5% 2W
R545	1-216-077-91	RES-CHIP 15K	5% 1/10W
R546	1-216-077-91	RES-CHIP 15K	5% 1/10W
R547	1-216-085-00	RES-CHIP 33K	5% 1/10W
R549	1-215-451-00	METAL 18K	1% 1/4W
R550	1-216-097-11	RES-CHIP 100K	5% 1/10W
R551	1-249-421-11	CARBON 2.2K	5% 1/4W
R552	1-216-057-00	RES-CHIP 2.2K	5% 1/10W
R553	1-215-457-00	METAL 33K	1% 1/4W
R554	1-215-457-00	METAL 33K	1% 1/4W
R556	1-215-437-00	METAL 4.7K	1% 1/4W
R558	1-249-421-11	CARBON 2.2K	5% 1/4W
R559	1-249-429-11	CARBON 10K	5% 1/4W
R560	1-216-073-00	RES-CHIP 10K	5% 1/10W
R562	1-249-401-11	CARBON 47	5% 1/4W
R565	1-216-073-00	RES-CHIP 10K	5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R567	1-216-105-91	RES-CHIP 220K	5% 1/10W
R568	1-249-383-11	CARBON 1.5	5% 1/4W
R570	1-216-069-00	RES-CHIP 6.8K	5% 1/10W
R571	1-215-437-00	METAL 4.7K	1% 1/4W
R573	1-216-089-11	RES-CHIP 47K	5% 1/10W
R577	1-215-913-11	METAL OXIDE 220	5% 3W
R578	1-216-369-00	METAL OXIDE 1	5% 2W
R579	1-216-097-11	RES-CHIP 100K	5% 1/10W
R580	1-208-830-11	METAL CHIP 100K	0.5% 1/10W
R581	1-208-794-11	METAL CHIP 3.3K	0.5% 1/10W
R582	1-208-846-11	METAL CHIP 470K	0.5% 1/10W
R584	1-216-295-11	SHORT 0	
R585	1-249-391-11	CARBON 6.8	5% 1/4W
R587	1-208-834-11	METAL CHIP 150K	0.5% 1/10W
R588	1-215-888-00	METAL OXIDE 220	5% 2W
R589	1-215-888-00	METAL OXIDE 220	5% 2W
R590	1-215-465-00	METAL 68K	1% 1/4W
R591	1-260-288-11	CARBON 0.47	5% 1/2W
R593	1-260-288-11	CARBON 0.47	5% 1/2W
R594	1-260-288-11	CARBON 0.47	5% 1/2W
R596	1-215-921-11	METAL OXIDE 4.7K	5% 3W
R597	1-247-750-11	CARBON 680	5% 1/2W
R598	1-249-438-11	CARBON 56K	5% 1/4W
R599	1-249-389-11	CARBON 4.7	5% 1/4W
R600	1-249-438-11	CARBON 56K	5% 1/4W
R601	1-249-418-11	CARBON 1.2K	5% 1/4W
R602	1-249-389-11	CARBON 4.7	5% 1/4W
R603	1-215-485-00	METAL 470K	1% 1/4W
R604	1-216-097-11	RES-CHIP 100K	5% 1/10W
R607	1-249-425-11	CARBON 4.7K	5% 1/4W
R608	1-240-205-91	CARBON 22M	5% 1/2W
R609	1-216-057-00	RES-CHIP 2.2K	5% 1/10W
R610	1-216-073-00	RES-CHIP 10K	5% 1/10W
R611	1-216-089-11	RES-CHIP 47K	5% 1/10W
R612	1-216-045-00	RES-CHIP 680	5% 1/10W
R614	1-216-041-00	RES-CHIP 470	5% 1/10W
R615	1-216-350-11	METAL OXIDE 1.2	5% 1W
R616	1-260-302-51	CARBON 6.8	5% 1/2W
R617	1-247-791-91	CARBON 22	5% 1/4W
R619	1-260-128-91	CARBON 270K	5% 1/2W
R620	1-215-915-11	METAL OXIDE 470	5% 3W
R622	1-216-400-11	METAL OXIDE 8.2	5% 3W
R622	1-215-908-00	METAL OXIDE 33 (KV-XA21M60/M61) (Except KV-XA21M60/M61)	5% 3W
R623	1-216-095-00	RES-CHIP 82K (Except KV-XA21M50(Malaysia)/M60/ M61(Malaysia))	5% 1/10W
R624	1-216-089-11	RES-CHIP 47K (Except KV-XA21M50(Malaysia)/M60/ M61(Malaysia))	5% 1/10W
R626	1-216-049-11	RES-CHIP 1K (Except KV-XA21M50(Malaysia)/M60/ M61(Malaysia))	5% 1/10W
R627	1-240-251-11	CMT-MELF 6.8	5% 10W
R629	1-247-747-11	CARBON 470	5% 1/2W
R630	1-249-429-11	CARBON 10K	5% 1/4W
R631	1-216-089-11	RES-CHIP 47K (Except KV-XA21M50(Malaysia)/M60/ M61(Malaysia))	5% 1/10W

The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION			REMARK
R632	1-202-933-61	FUSIBLE	0.1	10%	1/2W
R634	△ 1-218-265-11	METAL	8.2M	5%	1W
R635	1-216-492-11	METAL OXIDE	82K	5%	3W
R636	1-215-924-00	METAL OXIDE	15K	5%	3W
R637	1-216-492-11	METAL OXIDE	82K	5%	3W
R639	1-216-363-00	METAL OXIDE	0.33	5%	2W
R640	1-249-415-11	CARBON	680	5%	1/4W
R641	1-216-362-11	METAL OXIDE	0.27	5%	2W
R642	1-249-419-11	CARBON	1.5K	5%	1/4W
R643	1-247-843-11	CARBON	3.3K	5%	1/4W
R644	1-249-419-11	CARBON	1.5K	5%	1/4W
R646	1-215-924-00	METAL OXIDE	15K	5%	3W
R647	1-249-401-11	CARBON	47	5%	1/4W
R648	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R649	1-249-417-11	CARBON	1K	5%	1/4W
R650	1-215-882-00	METAL OXIDE	22	5%	2W
R652	1-215-925-11	METAL OXIDE	22K	5%	3W
R653	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R657	1-260-127-11	CARBON	220K	5%	1/2W
R659	1-216-049-11	RES-CHIP	1K	5%	1/10W
R660	1-216-073-00	RES-CHIP	10K	5%	1/10W
R661	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R680	1-216-308-00	RES-CHIP	4.7	5%	1/10W
R901	1-249-411-11	CARBON	330	5%	1/4W
R902	1-249-411-11	CARBON	330	5%	1/4W
R903	1-216-022-00	RES-CHIP	75	5%	1/10W
R904	1-216-033-00	RES-CHIP	220	5%	1/10W
R905	1-216-113-00	RES-CHIP	470K	5%	1/10W
R906	1-216-025-11	RES-CHIP	100	5%	1/10W
R907	1-216-113-00	RES-CHIP	470K	5%	1/10W
R908	1-216-025-11	RES-CHIP	100	5%	1/10W
R909	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R910	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R911	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R912	1-216-041-00	RES-CHIP	470	5%	1/10W
R913	1-216-049-11	RES-CHIP	1K	5%	1/10W
R914	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R915	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R916	1-216-017-91	RES-CHIP	47	5%	1/10W
R917	1-216-041-00	RES-CHIP	470	5%	1/10W
R918	1-216-041-00	RES-CHIP	470	5%	1/10W
<RELAY>					
RY601	△ 1-755-214-11	RELAY, AC POWER			
<SWITCH>					
S502	1-572-707-11	SWITCH, LEVER			
S600	△ 1-571-433-21	SWITCH, PUSH (AC POWER)			
S901	1-692-431-21	SWITCH, TACTILE			
S902	1-692-431-21	SWITCH, TACTILE			
S903	1-692-431-21	SWITCH, TACTILE			
S904	1-692-431-21	SWITCH, TACTILE			
S905	1-692-431-21	SWITCH, TACTILE			
S906	1-692-431-21	SWITCH, TACTILE			
S907	1-692-431-21	SWITCH, TACTILE			

REF. NO.	PART NO.	DESCRIPTION	REMARK		
<TRANSFORMER>					
T501	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE			
T503	△ 1-453-293-11	TRANSFORMER ASSY FLYBACK			
(NX-1748//M3A4)					
T601	1-424-682-11	TRANSFORMER, LINE FILTER			
T603	△ 1-433-513-31	TRANSFORMER, CONVERTER (SRT)			
T604	△ 1-431-852-11	TRANSFORMER, CONVERTER (SRT)			
<THERMISTOR>					
TH600	1-803-586-11	THERMISTOR, NTC			
<THERMISTOR>					
THP600	1-803-951-11	THERMISTOR, PTC			
<TUNER>					
TU101	8-598-451-00	TUNER, FSS BTF-WG441 (KV-XA21M60/M61)			
TU101	8-598-449-10	TUNER, FSS BTF-LG433 (Except KV-XA21M60/M61)			
<CRYSTAL>					
X001	1-579-125-11	VIBRATOR, CERAMIC			
X301	1-781-134-21	VIBRATOR, CRYSTAL			
X302	1-781-132-21	VIBRATOR, CRYSTAL			

	* A-1332-141-A	C1 BOARD MOUNTED (KV-XA21M50/XA21M61/ XA21M80(E))			
	* A-1332-163-A	C1 BOARD MOUNTED (KV-XA21M60)			
	* A-1332-155-A	C1 BOARD MOUNTED (KV-XA21M80(ME)/XA21M83) *****			
	7-682-948-01	SCREW +PSW 3X8			
<CAPACITOR>					
C700	1-102-074-00	CERAMIC	0.001UF	10.00%	50V
C701	1-126-933-11	ELECT	100UF	20.00%	16V
C702	1-102-114-00	CERAMIC	470PF	10.00%	50V
C703	1-110-389-11	FILM MELF	0.1UF	5%	250V
C705	1-162-114-00	CERAMIC	0.0047UF		2KV
C706	1-130-202-00	FILM	0.022UF	5.00%	400V
C707	1-107-651-11	ELECT	4.7UF	20.00%	250V
C1803	1-126-964-11	ELECT	10UF	20.00%	50V
(Except KV-XA21M60/M80(ME)/XA21M83)					
C1804	1-126-964-11	ELECT	10UF	20.00%	50V
(Except KV-XA21M60/M80(ME)/XA21M83)					
C1809	1-126-942-61	ELECT	1000UF	20.00%	25V
(Except KV-XA21M60/M80(ME)/XA21M83)					
C5952	1-107-616-11	CERAMIC	150PF	10.00%	500V
C5954	1-102-112-00	CERAMIC	330PF	10.00%	50V

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**

C1

The components identified by shading
and mark △ are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C5955	1-104-664-11	ELECT 47UF 20.00% 16V (Except KV-XA21M60)	
C5961	1-161-830-00	CERAMIC 0.0047UF 500V	
C5962	1-130-491-00	MYLAR 0.047UF 5.00% 50V	
C5963	1-107-638-11	ELECT 33UF 20.00% 160V	
C5964	1-126-935-11	ELECT 470UF 20.00% 10V	
C5968	1-106-383-00	MYLAR 0.047UF 10.00% 200V	
C5969	1-107-949-11	ELECT 2.2UF 20.00% 160V	
C5970	1-104-999-11	MYLAR 0.1UF 10.00% 200V	
C5972	1-126-935-11	ELECT 470UF 20.00% 16V	
C5973	1-130-491-00	MYLAR 0.047UF 5.00% 50V	
C5975	1-126-935-11	ELECT 470UF 20.00% 10V	
C5978	1-130-471-00	MYLAR 0.001UF 5.00% 50V	
C5979	1-130-471-00	MYLAR 0.001UF 5.00% 50V	
C5980	1-104-664-11	ELECT 47UF 20.00% 10V	
		<#####>	
CLP701	4-352-844-01	PIN, LEAD, COATING	
CLP702	4-352-844-01	PIN, LEAD, COATING	
		<CONNECTOR>	
CN700	1-695-915-11	TAB (CONTACT)	
CN701 *	1-564-509-11	PLUG, CONNECTOR 6P	
CN703	1-695-915-11	TAB (CONTACT)	
CN706	1-564-507-11	PLUG, CONNECTOR 4P	
CN1801 *	1-564-507-11	PLUG, CONNECTOR 4P (Except KV-XA21M60/M80(ME)/M83)	
CN1802 *	1-564-506-11	PLUG, CONNECTOR 3P (Except KV-XA21M60/ M80(ME)/M83)	
CN5961 *	1-564-510-11	PLUG, CONNECTOR 7P	
CN5962 *	1-564-506-11	PLUG, CONNECTOR 3P	
		<DIODE>	
D704	8-719-911-19	ISS119-25	
D705	8-719-911-19	ISS119-25	
D707	8-719-051-85	HSS83TD	
D708	8-719-051-85	HSS83TD	
D709	8-719-051-85	HSS83TD	
D1803	8-719-911-19	ISS119-25 (Except KV-XA21M60/M80(ME)/M83)	
D1804	8-719-911-19	ISS119-25 (Except KV-XA21M60/M80(ME)/M83)	
D1808	8-719-908-03	GP08D (Except KV-XA21M60/M80(ME)/M83)	
D5964	8-719-911-19	ISS119-25	
D5967	8-719-110-88	RD39ES-B2	
D5968	8-719-110-88	RD39ES-B2	
		<IC>	
IC700	8-759-712-99	TDA6107Q/NZ	
IC1800	8-759-822-38	LA6510 (Except KV-XA21M60/M80(ME)/M83)	
		<JACK>	
J701	△ 1-540-071-22	SOCKET, CRT	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<COIL>	
L705	1-414-186-31	INDUCTOR 33UH	
L707	1-414-186-31	INDUCTOR 33UH	
L708	1-410-667-31	INDUCTOR 22UH	
L5961	1-414-187-11	INDUCTOR 47UH	
		<TRANSISTOR>	
Q700	8-729-119-76	2SA1175-HFE	
Q1802	8-729-119-78	2SC2785-HFE (Except KV-XA21M60/M80(ME)/M83)	
Q5961	8-729-119-78	2SC2785-HFE (KV-XA21M60 Only)	
Q5961	8-729-423-33	2SC3311A-QRSTA (Except KV-XA21M60)	
Q5962	8-729-423-33	2SC3311A-QRSTA (Except KV-XA21M60)	
Q5962	8-729-119-78	2SC2785-HFE (KV-XA21M60 Only)	
Q5963	8-729-017-05	2SA1837 (Except KV-XA21M60)	
Q5963	8-729-809-26	2SA1606-E (KV-XA21M60 Only)	
Q5965	8-729-017-06	2SC4793 (Except KV-XA21M60)	
Q5965	8-729-809-29	2SC4159-E (KV-XA21M60 Only)	
Q5967	8-729-423-33	2SC3311A-QRSTA (Except KV-XA21M60)	
Q5967	8-729-119-78	2SC2785-HFE (KV-XA21M60 Only)	
Q5968	8-729-119-76	2SA1175-HFE	
		<RESISTOR>	
R700	1-219-743-11	CARBON 100 5% 1/2W	
R703	1-247-807-31	CARBON 100 5% 1/4W	
R704	1-247-807-31	CARBON 100 5% 1/4W	
R705	1-247-807-31	CARBON 100 5% 1/4W	
R709	1-219-746-11	CARBON 1K 5% 1/2W	
R710	1-240-933-91	CARBON 1.5K 5% 0.5W	
R711	1-219-746-11	CARBON 1K 5% 1/2W	
R712	1-219-752-11	CARBON 100K 5% 1/2W	
R713	1-216-399-00	METAL OXIDE 6.8 5% 3W	
R714	1-216-380-11	METAL OXIDE 8.2 5% 2W	
R715	1-249-401-11	CARBON 47 5% 1/4W	
R716	1-249-429-11	CARBON 10K 5% 1/4W	
R717	1-247-807-31	CARBON 100 5% 1/4W	
R718	1-249-428-11	CARBON 8.2K 5% 1/4W	
R719	1-215-473-00	METAL 150K 1% 1/4W	
R720	1-215-473-00	METAL 150K 1% 1/4W	
R722	1-247-891-00	CARBON 330K 5% 1/4W	
R1802	1-249-382-11	CARBON 1.2 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1803	1-249-382-11	CARBON 1.2 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1805	1-249-429-11	CARBON 10K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1806	1-249-425-11	CARBON 4.7K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1808	1-249-425-11	CARBON 4.7K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1809	1-249-435-11	CARBON 33K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1810	1-249-435-11	CARBON 33K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1811	1-249-440-11	CARBON 82K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	

The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.

C1 **F** **J2**

REF. NO.	PART NO.	DESCRIPTION	REMARK
R1812	1-249-435-11	CARBON 33K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1821	1-249-440-11	CARBON 82K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1822	1-249-435-11	CARBON 33K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1823	1-249-426-11	CARBON 5.6K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R1824	1-249-435-11	CARBON 33K 5% 1/4W (Except KV-XA21M60/M80(ME)/M83)	
R5950	1-249-401-11	CARBON 47 5% 1/4W	
R5951	1-249-400-11	CARBON 39 5% 1/4W	
R5952	1-249-398-11	CARBON 27 5% 1/4W	
R5955	1-104-664-11	ELECT 47UF 20.00% 16V (KV-XA21M60 Only)	
R5961	1-249-389-11	CARBON 4.7 5% 1/4W	
R5962	1-247-807-31	CARBON 100 5% 1/4W	
R5963	1-249-417-11	CARBON 1K 5% 1/4W	
R5964	1-260-312-11	CARBON 47 5% 1/2W	
R5965	1-249-414-11	CARBON 560 5% 1/4W	
R5966	1-249-417-11	CARBON 1K 5% 1/4W	
R5967	1-249-410-11	CARBON 270 5% 1/4W	
R5968	1-249-417-11	CARBON 1K 5% 1/4W	
R5969	1-249-383-11	CARBON 1.5 5% 1/4W	
R5971	1-249-409-11	CARBON 220 5% 1/4W	
R5972	1-249-432-11	CARBON 18K 5% 1/4W	
R5973	1-249-403-11	CARBON 68 5% 1/4W	
R5974	1-216-476-11	METAL OXIDE 180 5% 3W	
R5975	1-249-417-11	CARBON 1K 5% 1/4W	
R5976	1-249-432-11	CARBON 18K 5% 1/4W	
R5977	1-249-429-11	CARBON 10K 5% 1/4W	
R5978	1-247-807-31	CARBON 100 5% 1/4W	
R5979	1-249-414-11	CARBON 560 5% 1/4W	
R5980	1-247-807-31	CARBON 100 5% 1/4W	
R5981	1-249-416-11	CARBON 820 5% 1/4W	
R5982	1-249-383-11	CARBON 1.5 5% 1/4W	
R5985	1-249-401-11	CARBON 47 5% 1/4W	
R5986	1-249-397-11	CARBON 22 5% 1/4W	
<VARIABLE RESISTOR>			
RV700	1-241-656-11	RES, ADJ, METAL FILM 110M	
<SPARK GAP>			
SG700	1-519-422-11	GAP, SPARK	
SG701	1-519-422-11	GAP, SPARK	
SG702	1-519-422-11	GAP, SPARK	

REF. NO.	PART NO.	DESCRIPTION	REMARK
* A-1241-450-A	F BOARD MOUNTED		
* A-1241-464-A	F BOARD MOUNTED (KV-XA21M60 Only)	*****	
1-533-223-11	CLIP, FUSE		
1-803-830-11	VARISTOR (ERZV14D621) (Except KV-XA21M60)		
* 4-374-846-01	COVER, CAPACITOR, CAP TYPE (Except KV-XA21M60)		
<CAPACITOR>			
C654	\triangle 1-117-703-11	CERAMIC 0.0047UF 99% 250V	
C4602	\triangle 1-104-708-11	MYLAR 0.47UF 20.00% 250V	
<CONNECTOR>			
CN4601	1-580-843-11	PIN, CONNECTOR (POWER)	
CN4602	1-580-843-11	PIN, CONNECTOR (POWER)	
CN4603	1-695-915-11	TAB (CONTACT)	
<FUSE>			
F4601	\triangle 1-532-237-00	FUSE, TIME-LAG (BET) 3.15A/250V	
<RESISTOR>			
R4601	\triangle 1-202-719-00	SOLID 1M 10% 1/2W	
<TRANSFORMER>			
T4601	\triangle 1-424-682-11	TRANSFORMER, LINE FILTER	
T4602	\triangle 1-424-682-11	TRANSFORMER, LINE FILTER	

* A-1388-297-A	J2 BOARD MOUNTED (KV-XA21M83 Only)	*****	
<CONNECTOR>			
CN3421*	1-564-519-11	PLUG, CONNECTOR 4P	
<DIODE>			
D3421	8-719-110-72	RD30ESB2	
D3422	8-719-110-72	RD30ESB2	
D3423	8-719-110-72	RD30ESB2	
D3424	8-719-110-72	RD30ESB2	

**KV-XA21M80/XA21M83/XA21M50/
KV-XA21M61/ XA21M60
RM-952**



REF. NO.	PART NO.	DESCRIPTION	REMARK
<JACK>			
J3421	1-694-719-11	TERMINAL, PUSH (4P)	

* A-1347-164-A	V1 BOARD COMPLETE (KV-XA21M61 Only)		

<CAPACITOR>			
C801	1-104-664-11	ELECT	47UF 20.00% 16V
C805	1-163-038-11	CERAMIC CHIP	0.1UF 25V
C806	1-163-038-11	CERAMIC CHIP	0.1UF 25V
C814	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
C815	1-163-251-11	CERAMIC CHIP	100PF 5.00% 50V
C816	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C817	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V
C818	1-163-239-11	CERAMIC CHIP	33PF 5.00% 50V
C820	1-163-239-11	CERAMIC CHIP	33PF 5.00% 50V
C821	1-163-038-11	CERAMIC CHIP	0.1UF 25V
C822	1-163-009-11	CERAMIC CHIP	0.001UF 10.00% 50V
C823	1-126-933-11	ELECT	100UF 20.00% 16V
C826	1-126-963-11	ELECT	4.7UF 20.00% 50V
C829	1-163-113-00	CERAMIC CHIP	68PF 5.00% 50V
C830	1-163-038-11	CERAMIC CHIP	0.1UF 25V
C831	1-126-933-11	ELECT	100UF 20.00% 16V
C832	1-126-964-11	ELECT	10UF 20.00% 50V
C835	1-163-038-11	CERAMIC CHIP	0.1UF 25V
C837	1-126-933-11	ELECT	100UF 20.00% 16V
<CONNECTOR>			
CN801	* 1-774-812-11	CONNECTOR, BOARD TO BOARD 7P	
CN803	* 1-774-812-11	CONNECTOR, BOARD TO BOARD 7P	
<DIODE>			
D802	8-719-914-44	DAP202K	
D803	8-719-105-46	RD3.3M-B2	
D804	8-719-105-91	RD5.6M-B2	
<FERRITE BEAD>			
FB801	1-410-397-21	FERRITE	1.1UH
FB802	1-410-397-21	FERRITE	1.1UH
FB803	1-410-397-21	FERRITE	1.1UH
FB804	1-410-682-31	INDUCTOR	470UH
FB805	1-410-397-21	FERRITE	1.1UH
<IC>			
IC801	8-759-476-87	SAA5261	

REF. NO.	PART NO.	DESCRIPTION			REMARK	
<CHIP CONDUCTOR>						
JR800	1-216-295-11	SHORT	0			
JR801	1-216-295-11	SHORT	0			
JR802	1-216-295-11	SHORT	0			
JR804	1-216-295-11	SHORT	0			
JR805	1-216-295-11	SHORT	0			
<TRANSISTOR>						
Q801	8-729-120-28	2SC1623-L5L6				
Q803	8-729-120-28	2SC1623-L5L6				
Q805	8-729-120-28	2SC1623-L5L6				
Q806	8-729-120-28	2SC1623-L5L6				
Q807	8-729-120-28	2SC1623-L5L6				
Q808	8-729-120-28	2SC1623-L5L6				
Q810	8-729-120-28	2SC1623-L5L6				
Q811	8-729-019-01	2SD2394-EF				
Q817	8-729-900-53	DTC114EK				
<RESISTOR>						
R800	1-208-806-11	METAL CHIP	10K	0.5%	1/10W	
R801	1-216-295-11	SHORT	0			
R802	1-216-025-11	RES-CHIP	100	5%	1/10W	
R803	1-216-295-11	SHORT	0			
R804	1-216-295-11	SHORT	0			
R805	1-216-295-11	SHORT	0			
R807	1-216-295-11	SHORT	0			
R813	1-216-295-11	SHORT	0			
R820	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R821	1-216-083-00	RES-CHIP	27K	5%	1/10W	
R822	1-216-025-11	RES-CHIP	100	5%	1/10W	
R824	1-216-295-11	SHORT	0			
R825	1-216-295-11	SHORT	0			
R827	1-216-295-11	SHORT	0			
R828	1-216-025-11	RES-CHIP	100	5%	1/10W	
R829	1-216-025-11	RES-CHIP	100	5%	1/10W	
R830	1-216-295-11	SHORT	0			
R831	1-216-295-11	SHORT	0			
R832	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W	
R835	1-216-295-11	SHORT	0			
R839	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R841	1-216-025-11	RES-CHIP	100	5%	1/10W	
R842	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R843	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R844	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R845	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R846	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R847	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R848	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R849	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R850	1-216-105-91	RES-CHIP	220K	5%	1/10W	
R851	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R853	1-216-067-00	RES-CHIP	5.6K	5%	1/10W	
R857	1-216-077-91	RES-CHIP	15K	5%	1/10W	
R861	1-216-049-11	RES-CHIP	1K	5%	1/10W	

The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.

V1

REF. NO.	PART NO.	DESCRIPTION	REMARK
R862	1-260-095-11	CARBON 470	5%
R863	1-216-049-11	RES-CHIP 1K	5%
R864	1-216-041-00	RES-CHIP 470	5%
R866	1-215-880-00	METAL OXIDE 10	5%
R871	1-216-037-00	RES-CHIP 330	5%
R879	1-216-073-00	RES-CHIP 10K	5%
R880	1-216-041-00	RES-CHIP 470	5%
R882	1-216-049-11	RES-CHIP 1K	5%
R884	1-216-025-11	RES-CHIP 100	5%
<CRYSTAL>			
X801	1-578-774-11	VIBRATOR, CRYSTAL	

MISCELLANEOUS			

1-501-372-81	ANTENNA, TELESCOPIC	(KV-XA21M50(GE)/M80/M83)	
1-417-151-21	MATCHING TRANSFORMER, ANTENNA	(KV-XA21M50(GE)/M80/M83)	
1-569-008-21	ADAPTOR, CONVERSION 2P	(KV-XA21M80(E)/XA21M83 Only)	
1-529-968-11	SPEAKER (5CM)	(KV-XA21M83 Only)	
1-529-125-11	SPEAKER (13X7CM)		
1-416-864-12	COIL, VM		
\triangle 1-416-946-11	COIL, DEMAGNETIC	(Except KV-XA21M50(Malaysia)/M60/	
		M61(Malaysia))	
\triangle 1-419-479-51	COIL, DEGAUSSING	(Except KV-XA21M50(Malaysia)/M60/	
		M61(Malaysia))	
1-452-728-41	COIL, NA ROTATION (RT-154)	(Except KV-XA21M60)	
1-452-032-00	MAGNET, DISC		
1-540-005-31	CAP ASSY, HIGH VOLTAGE		
1-500-249-11	BEAD, FERRITE (CASE)	(KV-XA21M83 Only)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
\triangle 1-574-062-11	CORD, POWER (WITH CONNECTOR)	2.5A/250V	
\triangle 1-575-023-11	CORD, POWER (WITH CONNECTOR)	6A/250V	
		(KV-XA21M60 Only)	
1-900-212-58	LEAD ASSY, FOCUS		
1-900-701-49	LEAD ASSY, G2		
\triangle 8-451-505-11	DEFLECTION YOKE (Y21RSA-S)		
\triangle 8-738-812-05	PICTURE TUBE (A51LPT70X)		
		(S/GE/EM)	
\triangle 8-738-809-05	PICTURE TUBE (A51LPT70X)		
		(ME/E)	

ACCESSORIES AND PACKING MATERIALS

3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)
* 4-039-372-01	BAG, PROTECTION
* 4-037-760-01	BAG, PROTECTION (KV-XA21M60 Only)
* 4-077-934-01	INDIVIDUAL CARTON
* 4-081-607-01	INDIVIDUAL CARTON (KV-XA21M60 Only)
* 4-077-935-01	CUSHION (UPPER) ASSY
* 4-081-437-01	CUSHION (UPPER) ASSY (KV-XA21M60 Only)
* 4-077-936-01	CUSHION (LOWER) ASSY
* 4-081-440-01	CUSHION (LOWER) ASSY (KV-XA21M60 Only)
4-080-934-11	MANUAL INSTRUCTION (KV-XA21M60 Only)
4-080-391-12	MANUAL INSTRUCTION (KV-XA21M80(ME))
4-080-391-21	MANUAL INSTRUCTION (KV-XA21M50/M80)
4-392-003-11	BAND, HOLD (Except KV-XA21M60)
4-392-003-21	BAND, HOLD (KV-XA21M60 Only)
4-392-004-11	CLIP (Except KV-XA21M60)
4-059-705-01	CLIP (KV-XA21M60 Only)

REMOTE COMMANDER

1-418-163-12	REMOTE COMMANDER (RM-952)
9-939-697-01	BATTERY COVER REMOTE COMMANDER

SUPPLEMENT-2

BG3R CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
KV-XA21M80	RM-952	E	SCC-U53B-A	KV-XA21M60	RM-952	S	SCC-U49D-A
KV-XA21M83	RM-952	ME	SCC-U48D-A	KV-XA21M80	RM-952	ME	SCC-U48C-A
KV-XA21M50	RM-952	EM	SCC-U45F-A				
KV-XA21M50	RM-952	GE	SCC-U52B-A				
KV-XA21M61	RM-952	EM	SCC-U45E-A				
KV-XA21M61	RM-952	GE	SCC-U52C-A				

SUBJECT : PARTS SUFFIX CHANGE

Note : The changes apply to all models above with serial number starting from;

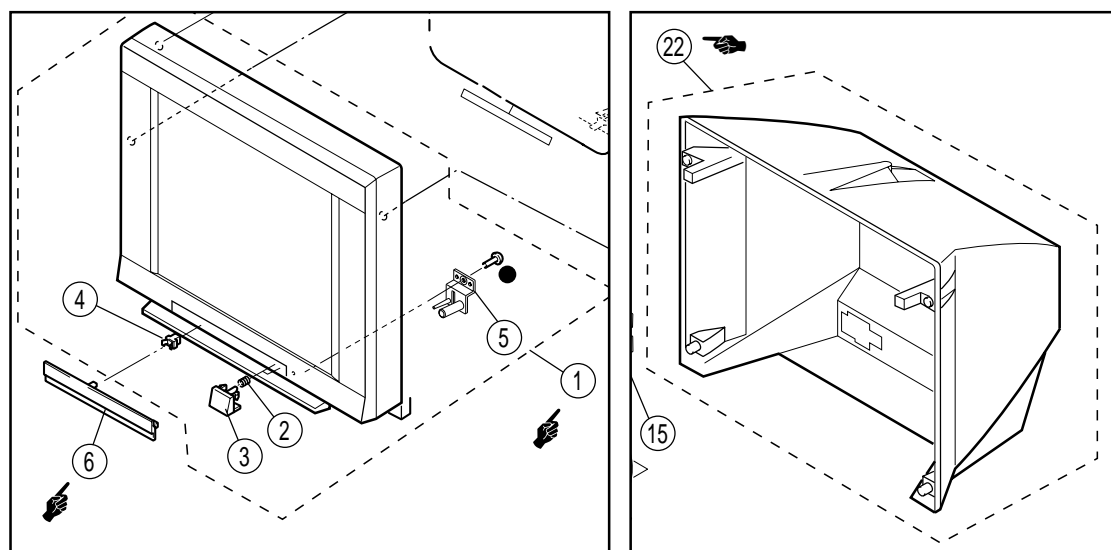
KVD07176 : KV-XA21M80(E) = 1,002,125 ~
KV-XA21M80(ME) = 1,010,260 ~
KV-XA21M50(EM) = 1,004,181 ~
KV-XA21M83(ME) = 2,004,249 ~
KV-XA21M61(EM) = 1,001,931 ~
KV-XA21M61(GE) = 1,002,475 ~
KV-XA21M60(S) = 6,005,298 ~

KVD06470 : KV-XA21M80(E) = 1,002,125 ~
KV-XA21M80(ME) = 2,009,415 ~
DOOR CONTROL = 2,005,167 ~
KV-XA21M83(ME) = 2,003,069 ~
KV-XA21M61(GE) = 1,001,053 ~
KV-XA21M61(EM) = 1,001,350 ~
DOOR CONTROL = 1,001,351 ~
KV-XA21M50(EM) = 1,002,740 ~
DOOR CONTROL = 1,003,701 ~

SECTION 6. EXPLODED VIEW

6.1. PICTURE TUBE

(see page 75)



<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>REMARK</u>	
1	X-4038-507-3	BEZNET ASSY	(ECN KVD07176)	2 – 5
6	4-080-399-12	DOOR CONTROL (KV-XA21M80/XA21M50)	(ECN KVD06470)	
	4-080-399-22	DOOR CONTROL (KV-XA21M80)	(ECN KVD06470)	
	4-080-399-32	DOOR CONTROL (KV-XA21M61)	(ECN KVD06470)	
	4-080-399-42	DOOR CONTROL (KV-XA21M60)	(ECN KVD06470)	
22	X-4038-831-3	REAR COVER ASSY	(ECN KVD07176)	